

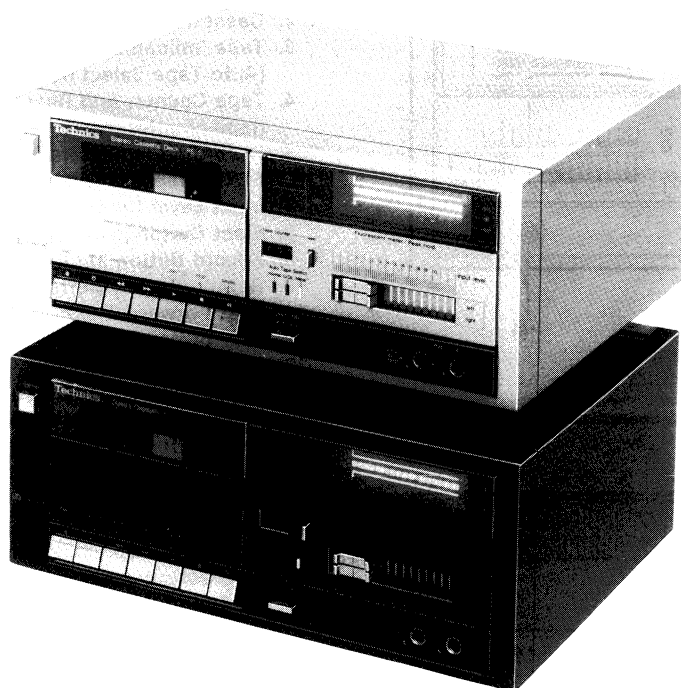
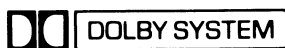
# Service Manual

Soft-Touch Cassette Deck with  
Auto Tape Selector

Cassette Deck

## RS-5

(Silver Face)  
(Black Face)



This is the Service Manual for the following areas.

- Ⓓ ..... For all European areas except United Kingdom.
- Ⓑ ..... For United Kingdom.
- Ⓐ ..... For Asia, Latin America, Middle East and Africa areas.
- Ⓐ ..... For Australia.

### RS-M24 MECHANISM SERIES

#### Specifications

Track system:	4-track 2-channel stereo recording and playback	Outputs:	LINE; output level 400mV, output impedance 2.0kΩ or less
Tape speed:	4.8cm/s	Bias frequency:	80kHz
Wow and flutter:	0.05% (WRMS), ±0.14% (DIN)	Motor:	Electrical DC governor motor
Frequency response:	Metal tape; 20—17,000Hz 30—15,000Hz (DIN) CrO <sub>2</sub> tape; 20—16,000Hz 30—15,000Hz (DIN) Normal tape; 20—15,000Hz 30—14,000Hz (DIN)	Heads:	2-head system; 1-MX head for record/playback 1-double-gap ferrite head for erasure
Signal-to-noise ratio:	Dolby* NR in; 67dB (above 5kHz) Dolby NR out; 57dB (signal level = max. input level A weighted, CrO <sub>2</sub> type tape)	Power requirement:	Ⓓ ... AC 220V, 50-60Hz Ⓑ ... AC 240V, 50Hz for United Kingdom. Ⓐ ... AC 110/125/220/240V, 50-60Hz Ⓐ ... AC 240V, for Australia.
Fast forward and rewind time:	Approx. 90 seconds with C-60 cassette tape	Power consumption:	ⒹⒷⒶ ... 15W Ⓐ ..... 11W
Inputs:	MIC; sensitivity 0.25mV, applicable microphone impedance 400Ω—10kΩ LINE; sensitivity 60mV, input impedance more than 47kΩ	Dimensions:	31.5cm(W) × 12.4cm(H) × 24.8cm(D)
		Weight:	3.2kg

Specifications are subject to change without notice.

\* 'Dolby' and the double-D symbol are trademarks of Dolby Laboratories.

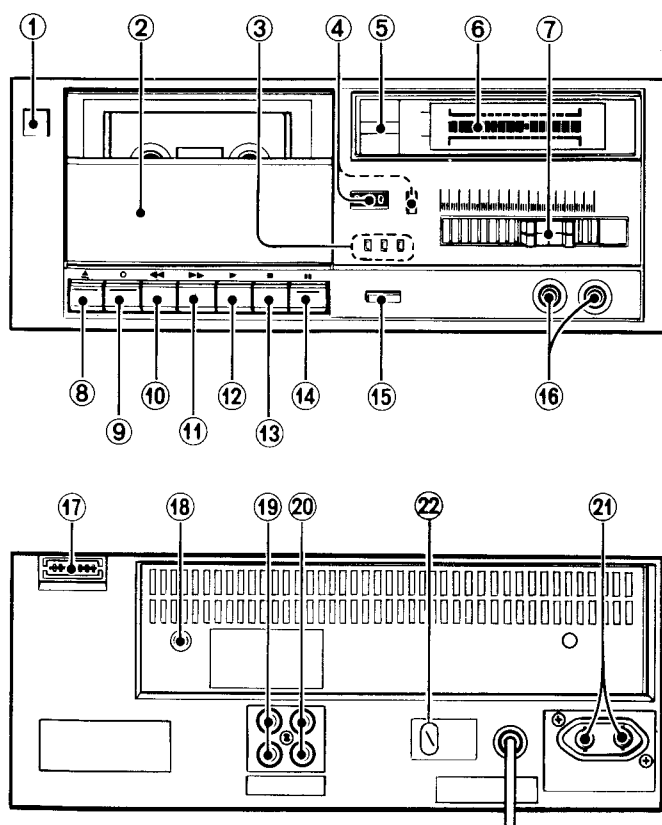
# Technics

**Matsushita Electric Trading Co., Ltd.**  
P.O. Box 288, Central Osaka Japan

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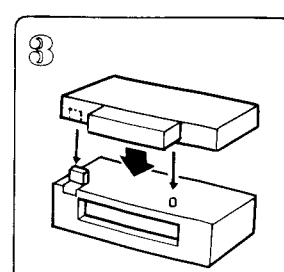
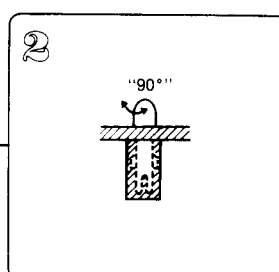
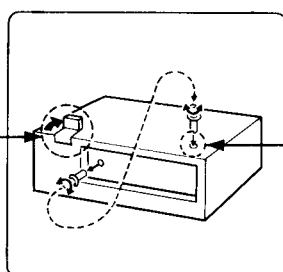
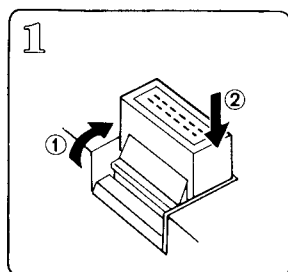
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## LOCATION OF CONTROLS AND COMPONENTS



1. Power Switch [power (push on)]
2. Cassette Holder
3. Tape Indicators  
[Auto Tape Select (Normal • CrO<sub>2</sub> • Metal)]
4. Tape Counter and Reset Button  
(tape counter-reset)
5. Recording Indicators [rec]
6. FL (fluorescent level) Meters
7. Input Level Controls [input level (left • right)]
8. Eject Button [eject (▲)]
9. Record Button [rec-□ (○)]
10. Rewind/Review Button [rew/rev (◀◀)]
11. Fast Forward/Cue Button [ff/cue (▶▶)]
12. Play Button [play-□ (▶)]
13. Stop Button [stop (■)]
14. Pause Button [pause (⏸)]
15. Dolby Noise-Reduction Switch  
[Dolby NR (■ out • □ in)]
16. Microphone Jacks [mic (L • R) (Auto Input Select)]
17. Direct Connector
18. Fixing Pin
19. Line Input Jacks [LINE IN (R • L)]
20. Line Output Jacks [LINE OUT (R • L)]
21. AC Outlet Unswitched
  - \* □ □ ..... For All European areas.
  - \* N ..... For Asia, Latin America, Middle East and Africa areas.
22. AC Power Voltage Selector
  - \* N ..... For Asia, Latin America, Middle East and Africa areas.

## FOR CONNECTION WITH THE DIRECT CONNECTOR



Connections should be made in accordance with the connection diagram and the following instructions: When 2 microphones are used in order to record in stereophonic sound, be sure both of them have the same performance and specification standards.

### 1. For connection with the direct connector:

- Connection can be made without using the stereo pin cords when the unit and TECHNICS' SU-5 Stereo Amplifier and ST-5 FM/AM tuner are stacked up for use.
- Set the direct connector to the erect position, replace the fixing pin at the unit's rear panel on the unit's top and connect the stereo amplifier properly (the fixing pin can be removed by rotating it 90°).

### Notes:

- The stereo pin cords must be detached when connection is made using the direct connector.
- Do not shake or twist the components since they will unnecessarily strain the direct connector and fixing pin and may damage them in the process.

### 2. For connection with the stereo pin cords

- Connection is made with the stereo pin cords when this unit is used in combination with the SU-5 stereo amplifier, ST-5 FM/AM tuner or other components.

### Notes:

- Do not set the direct connector to the erect position.
- Secure the fixing pin to the unit's rear panel.

### 3. Location of this unit and stereo amplifier

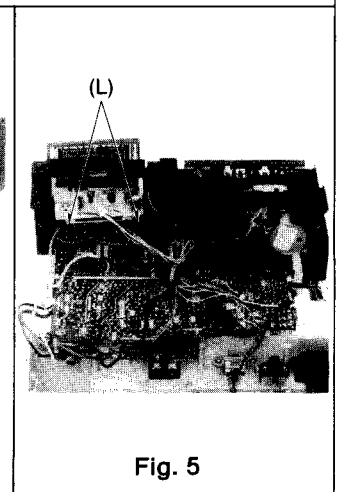
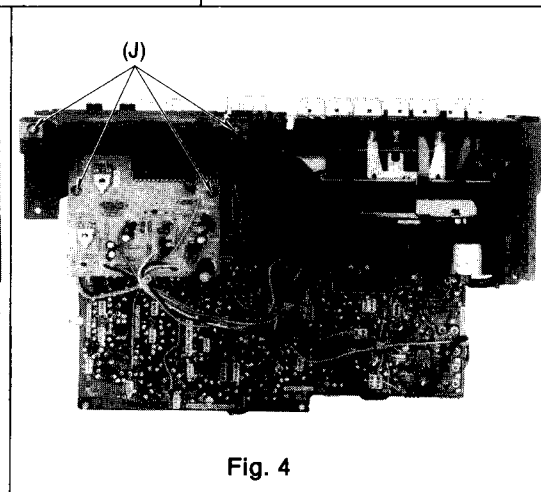
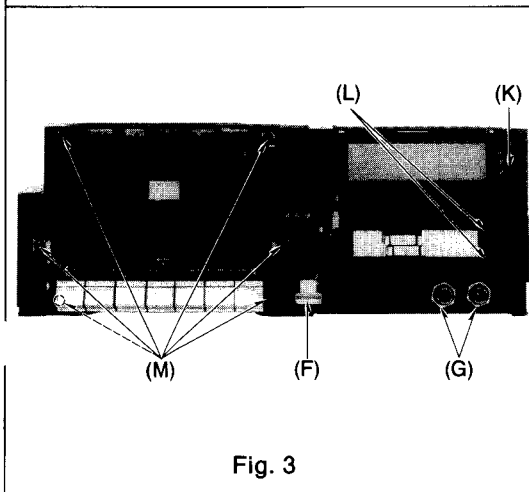
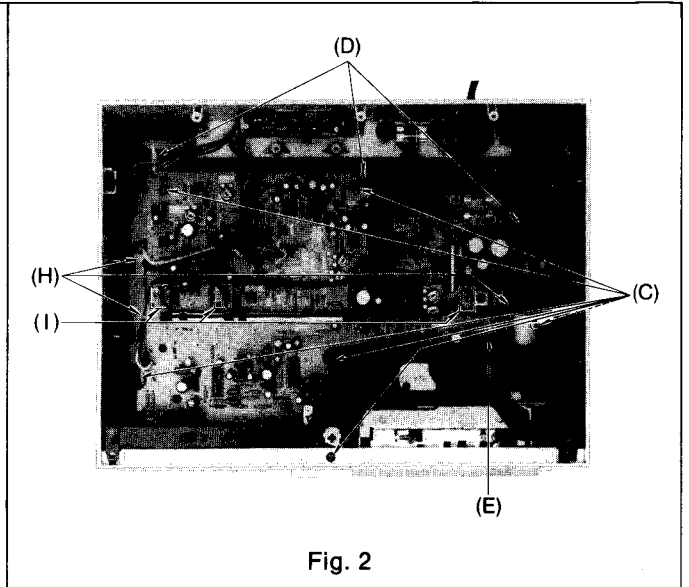
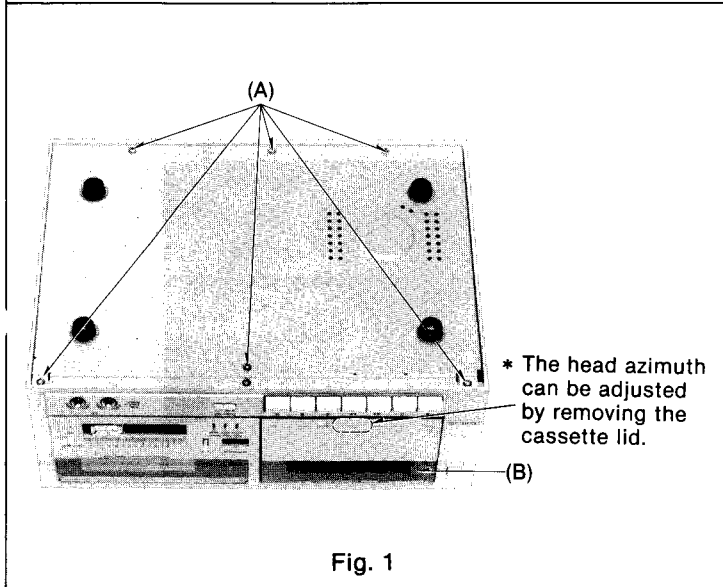
If this unit is placed on top or next to the stereo amplifier, a "hum" noise may be heard during tape playback. Refer to the information below in order to avoid this.

- If the stereo amplifier and this unit are placed one above the other, leave as much space as possible between them, and place them where there is the least amount of hum.

- If the stereo amplifier and this unit are placed one beside the other, try reversing their positions, and place them where there is the least amount of hum.

A "click" noise may be heard when the Power Switch is turned on or off. To avoid this, be sure to set the volume control of the amplifier to the minimum position.

## DISASSEMBLY INSTRUCTIONS



Ref. No.	Procedure	To remove ———	Remove ———	Shown in fig. ———
1	1	Bottom cover	• 6 screws ..... (A)	1
2	1 → 2	Main circuit board and mechanism unit	• Cassette lid ..... (B) • 6 screws ..... (C) • Cord clamber ..... (D)	1 2 2
3	1 → 2 → 3	Main circuit board	• Screw ..... (E) • Dolby NR switch button ..... (F) • 2 nuts ..... (G) • Cord clamber ..... (H) • 3 connectors ..... (I)	2 3 3 2 2
4	1 → 2 → 4	FL meter circuit board	• 4 screws ..... (J) • Meter cover-B and meter filter ..... (K)	4 3
5	1 → 2 → 5	Input level control circuit board	• 4 screws ..... (L)	3, 5
6	1 → 2 → 6	Mechanism unit	• 6 screws ..... (M)	3

### ASSEMBLY NOTES:

Precautions for mounting the input level control knob assembly

- Move the input level control lever and the input level control knob assembly to the right. Check that they engage each other as shown in fig. 6 and install the slide guide.

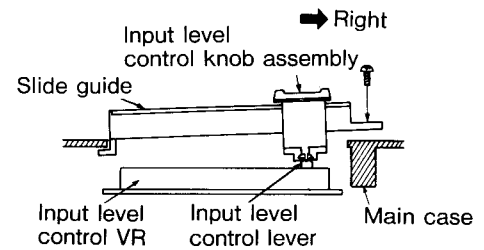
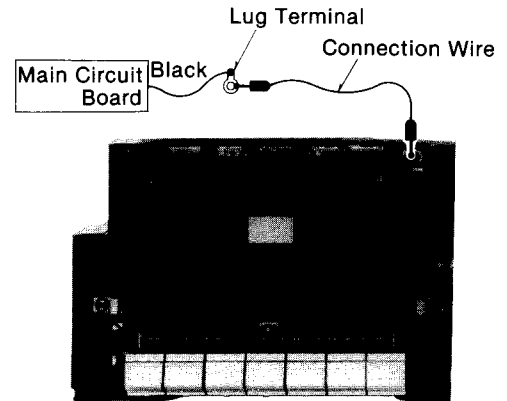


Fig. 6

### MECHANISM SECTION

1. For repair, measurement or adjustment with the mechanism removed from the unit be sure to ground the lower base plate of the mechanism.
2. For grounding, connect a extension cord to the mechanism's lower base plate and the lug terminal from amplifier printed circuit board.
3. Without grounding, the amplifier does not operate properly.



## MEASUREMENT AND ADJUSTMENT METHODS

### NOTE:

Tape speed can be adjusted through the small hole on the back-side of main case by the  $\ominus$  screw driver (non metal type) as shown in fig. 1.

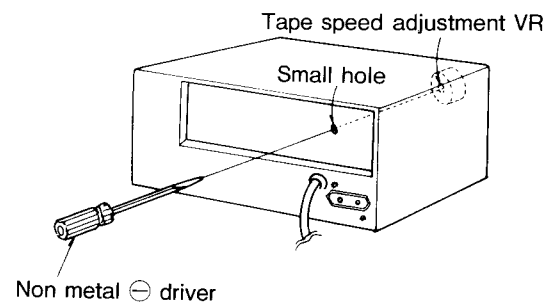


Fig. 1

### ADJUSTMENT PARTS LOCATION

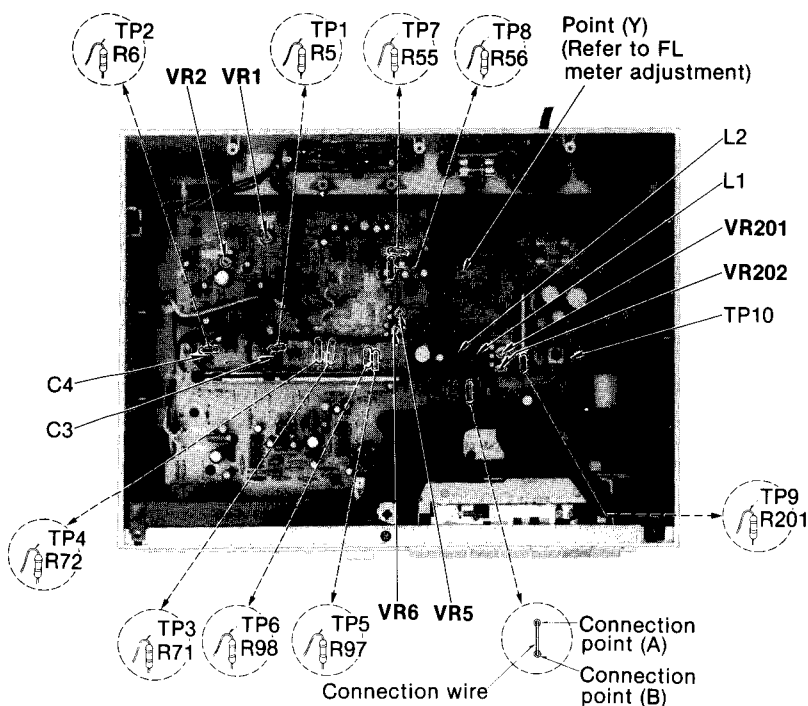
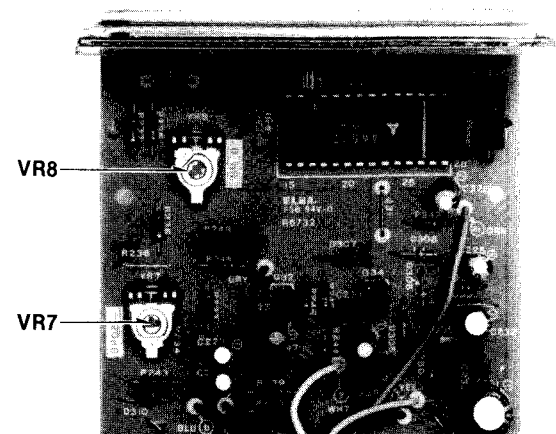
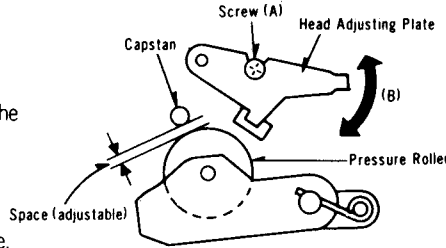
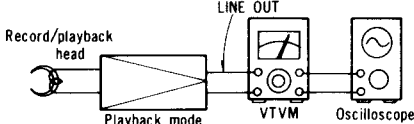
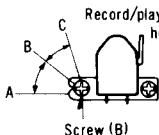
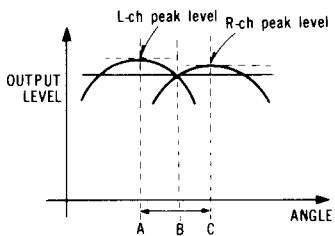
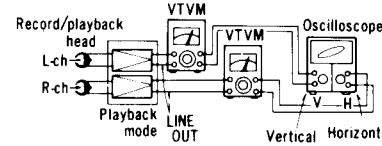
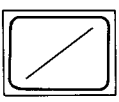
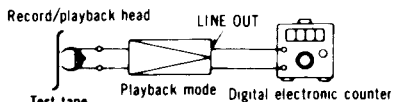


Fig. 2

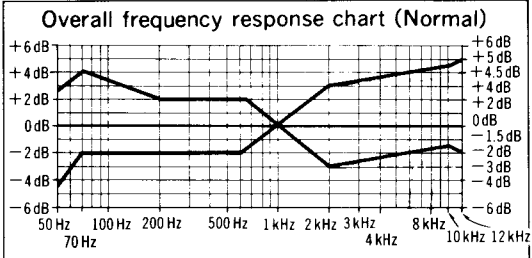
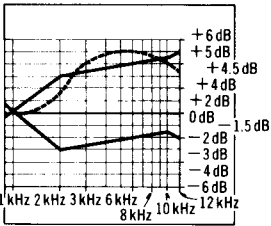
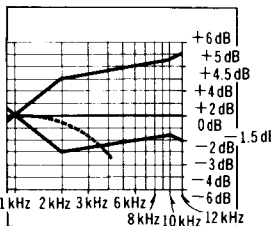


**NOTES:** Keep good condition, set switches and controls in the following positions, unless otherwise specified.

- Make sure heads are clean.
- Make sure capstan and pressure roller are clean.
- Judgeable room temperature:  $20 \pm 5^{\circ}\text{C}$  ( $68 \pm 9^{\circ}\text{F}$ )
- Dolby NR switch: OUT
- Input level controls: Maximum

ITEM	MEASUREMENT & ADJUSTMENT
<p><b>A Head position adjustment</b></p> <p>Condition:</p> <ul style="list-style-type: none"> <li>• Playback and pause mode</li> </ul>	<p>(The head adjusting plate is provided to adjust the tape touch of the head in cue or review mode.)</p> <ol style="list-style-type: none"> <li>1 Press the playback button and pause button.</li> <li>2 Measure the space between the pressure roller and the capstan.</li> </ol> <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <b>Standard value: <math>0.5 \pm 0.3\text{mm}</math></b> </div> <ol style="list-style-type: none"> <li>3 If the measured value is not within the standard value, untighten screw (A), and slide the head adjusting plate in the direction of arrow (B) for adjustment.</li> </ol>  <p style="text-align: center;"><b>Fig. 3</b></p>
<p><b>B Head azimuth adjustment</b></p> <p>Condition:</p> <ul style="list-style-type: none"> <li>• Playback mode</li> <li>• Normal tape mode</li> </ul> <p>Equipment:</p> <ul style="list-style-type: none"> <li>• VTVM</li> <li>• Oscilloscope</li> <li>• Test tape (azimuth) ... QZZCFM</li> </ul>	<p><b>L-ch/R-ch output balance adjustment</b></p> <ol style="list-style-type: none"> <li>1 Make connections as shown in fig. 4.</li> </ol>  <p style="text-align: center;"><b>Fig. 4</b></p> <ol style="list-style-type: none"> <li>2 Playback the 8kHz signal from the test tape (QZZCFM). Adjust screw (B) in fig. 5 for maximum output L-ch and R-ch levels.</li> </ol> <p>When the output levels of L-ch and R-ch are not at maximum at the same time, readjust as follows.</p> <ol style="list-style-type: none"> <li>3 Turn the screw shown in fig. 5 to find angles A and C (points where peak output levels for left and right channels are obtained). Then, locate the angle B between angles A and C, i.e., a point where L-ch and R-ch output levels come together at maximum. (Refer to figs. 5 and 6.)</li> </ol> <p><b>L-ch/R-ch phase adjustment</b></p> <ol style="list-style-type: none"> <li>4 Make connections as shown in fig. 7.</li> <li>5 Playback the 8kHz signal from the test tape (QZZCFM). Adjust screw (B) shown in fig. 5 so that pointers of the two VTVMs swing to maximum and a waveform as illustrated in fig. 8 is obtained on the oscilloscope.</li> </ol>  <p style="text-align: center;"><b>Fig. 5</b></p>  <p style="text-align: center;"><b>Fig. 6</b></p>  <p style="text-align: center;"><b>Fig. 7</b></p>  <p style="text-align: center;"><b>Fig. 8</b></p>
<p><b>C Tape speed</b></p> <p>Condition:</p> <ul style="list-style-type: none"> <li>• Playback mode</li> <li>• Normal tape mode</li> </ul> <p>Equipment:</p> <ul style="list-style-type: none"> <li>• Digital electronic counter or frequency counter</li> <li>• Test tape ... QZZCWAT</li> </ul>	<p><b>Tape speed accuracy</b></p> <ol style="list-style-type: none"> <li>1 Test equipment connection is shown in fig. 9.</li> <li>2 Playback test tape (QZZCWAT 3,000Hz), and supply playback signal to frequency counter.</li> <li>3 Take measurement at middle section of tape.</li> <li>4 Measure this frequency.</li> <li>5 On the basis of 3,000Hz, determine value by following formula:</li> </ol> $\text{Tape speed accuracy} = \frac{f - 3,000}{3,000} \times 100 (\%) \quad \text{where, } f = \text{measured value}$ <div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> <b>Standard value: <math>\pm 1.5\%</math></b> </div> <p><b>Adjustment method</b></p> <ol style="list-style-type: none"> <li>1 Playback the test tape (middle)</li> <li>2 Adjust so that frequency becomes 3,000Hz</li> <li>3 Tape speed adjustment VR shown in fig. 1.</li> </ol>  <p style="text-align: center;"><b>Fig. 9</b></p>

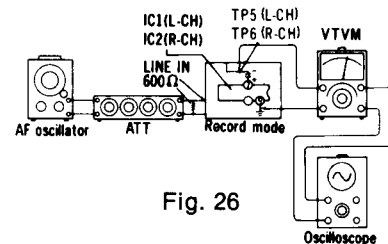
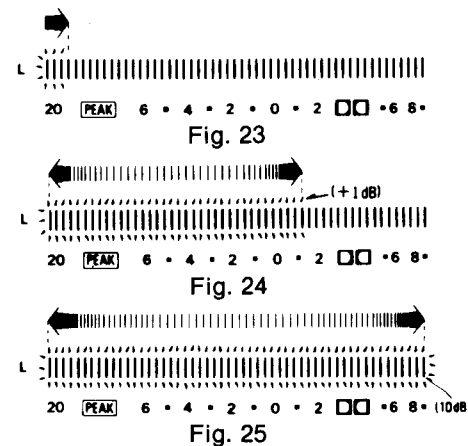
ITEM	MEASUREMENT & ADJUSTMENT																				
	<p><b>Tape speed fluctuation</b></p> <p>Make measurements in same manner as above (beginning, middle and end of tape), and determine the difference between maximum and minimum values and calculate as follows:</p> $\text{Tape speed fluctuation} = \frac{f_1 - f_2}{3.000} \times 100 (\%) \quad f_1 = \text{maximum value, } f_2 = \text{minimum value}$ <div>Standard value: Less than 1%</div> <p><b>Note:</b> Please use non metal type screwdriver when you adjust tape speed accuracy on this unit.</p>																				
<p><b>④ Playback frequency response</b></p> <p>Condition:</p> <ul style="list-style-type: none"><li>• Playback mode</li><li>• Normal tape mode</li></ul> <p>Equipment:</p> <ul style="list-style-type: none"><li>• VTVM</li><li>• Oscilloscope</li><li>• Test tape... QZZCFM</li></ul>	<ol style="list-style-type: none"><li>1. Test equipment connection is shown in fig. 4.</li><li>2. Place UNIT into playback mode.</li><li>3. Playback the frequency response test tape (QZZCFM).</li><li>4. Measure output level at 315Hz, 12.5kHz, 8kHz, 4kHz, 1kHz, 250Hz, 125Hz and 63Hz, and compare each output level with the standard frequency 315Hz, at LINE OUT</li><li>5. Make measurement for both channels.</li><li>6. Make sure that the measured value is within the range specified in the frequency response chart (shown in fig. 10).</li></ol> <p><b>Adjustment</b></p> <ol style="list-style-type: none"><li>1. If the measurement value increases in the high frequency range, as shown in fig. 11, remove capacitor C3 (L-CH) and C4 (R-CH) (Refer to fig. 2).</li></ol> <p><b>Compensation value</b></p> <table><tr><td>6kHz</td><td>8kHz</td><td>10kHz</td><td>12.5kHz</td></tr><tr><td>-0.2dB</td><td>-0.4dB</td><td>-0.8dB</td><td>-1.2dB</td></tr></table> <ol style="list-style-type: none"><li>2. If the measurement value decreases in the high frequency range, as shown in fig. 12, insert and solder capacitors C3 (L-CH) and C4 (R-CH).</li></ol> <p><b>Compensation value</b></p> <table><tr><td>6kHz</td><td>8kHz</td><td>10kHz</td><td>12.5kHz</td></tr><tr><td>+0.2dB</td><td>+0.4dB</td><td>+0.8dB</td><td>+1.2dB</td></tr></table> <p><b>Capacitors</b></p> <table><tr><td>Ref. No.</td><td>Part No.</td></tr><tr><td>C3, C4</td><td>ECKD1H271KB</td></tr></table>	6kHz	8kHz	10kHz	12.5kHz	-0.2dB	-0.4dB	-0.8dB	-1.2dB	6kHz	8kHz	10kHz	12.5kHz	+0.2dB	+0.4dB	+0.8dB	+1.2dB	Ref. No.	Part No.	C3, C4	ECKD1H271KB
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Ref. No.	Part No.																				
C3, C4	ECKD1H271KB																				
<p><b>⑤ Playback gain</b></p> <p>Condition:</p> <ul style="list-style-type: none"><li>• Playback mode</li><li>• Normal tape mode</li></ul> <p>Equipment:</p> <ul style="list-style-type: none"><li>• VTVM</li><li>• Oscilloscope</li><li>• Test tape... QZZCFM</li></ul>	<ol style="list-style-type: none"><li>1. Test equipment connection is shown in fig. 4.</li><li>2. Playback standard recording level portion on test tape (QZZCFM 315Hz), and using VTVM measure the output level at LINE OUT.</li><li>3. Make measurement for both channels</li></ol> <div>Standard value: 0.4V ± 2dB [around 0.42V: at test points TP3 (L-CH) and TP4 (R-CH)]</div> <p><b>Adjustment</b></p> <ol style="list-style-type: none"><li>1. If measured value is not within standard, adjust VR1 (L-CH), VR2 (R-CH) (See fig. 2 on page 4).</li><li>2. After adjustment, check "Playback frequency response" again.</li></ol>																				
<p><b>⑥ Bias leakage</b></p> <p>Condition:</p> <ul style="list-style-type: none"><li>• Record mode</li><li>• Metal tape mode</li></ul> <p>Equipment:</p> <ul style="list-style-type: none"><li>• VTVM</li><li>• Oscilloscope</li></ul>	<ol style="list-style-type: none"><li>1. Test equipment connection is shown in fig. 13.</li><li>2. Place UNIT into record mode.</li><li>3. Adjust trap coil L1 (L-CH), L2 (R-CH), so that measured value on VTVM becomes minimum.</li><li>4. Take adjustment for both channels.</li></ol>																				

ITEM	MEASUREMENT & ADJUSTMENT
<p><b>⑥ Erase current</b></p> <p>Condition:</p> <ul style="list-style-type: none"> <li>• Record mode</li> <li>• Metal tape mode</li> </ul> <p>Equipment:</p> <ul style="list-style-type: none"> <li>• VTVM</li> <li>• Oscilloscope</li> </ul>	<ol style="list-style-type: none"> <li>1. Test equipment connection is shown in fig. 14.</li> <li>2. Place UNIT into record and metal tape mode and then measure voltage at test point 9.</li> <li>3. Read voltage on VTVM and calculate erase current by following formula:  <math display="block">\text{Erase current (A)} = \frac{\text{Voltage across both ends of R201}}{1 (\Omega)}</math> </li> </ol> <div style="border: 1px solid black; padding: 5px; margin: 10px auto; width: fit-content;"> <b>Standard value: 155 ± 15 mA (Metal position)</b> </div> <ol style="list-style-type: none"> <li>4. If measured value is not within standard, adjust as follows.</li> </ol> <p><b>Adjustment</b></p> <ol style="list-style-type: none"> <li>1. Open the point (A) and short the point (B) on the main circuit board in the wiring connection diagram (See page 15).</li> <li>2. Make measurement for erase current.</li> <li>3. Make sure that the measured value is within the erase current of 140 mA to 170 mA.</li> <li>4. If it is beyond the value, carry out the following adjustments: <ul style="list-style-type: none"> <li>• If the erase current is less than 140 mA, short the point (A) and (B).</li> <li>• If the erase current is more than 170 mA, open the points (A) and (B).</li> </ul> </li> </ol>
<p><b>⑨ Overall frequency response</b></p> <p>Condition:</p> <ul style="list-style-type: none"> <li>• Record/playback mode</li> <li>• Normal tape mode</li> <li>• CrO<sub>2</sub> tape mode</li> <li>• Metal tape mode</li> <li>• Input level controls...MAX</li> </ul> <p>Equipment:</p> <ul style="list-style-type: none"> <li>• VTVM</li> <li>• AF oscillator</li> <li>• ATT</li> <li>• Oscilloscope</li> <li>• Resistor (600Ω)</li> <li>• Test tape (reference blank tape)</li> <li>...QZZCRA for Normal</li> <li>...QZZCRX for CrO<sub>2</sub></li> <li>...QZZCRZ for Metal</li> </ul>	<p><b>Note :</b></p> <p>Before measuring and adjusting, make sure of the playback frequency response (For the method of measurement, please refer to the playback frequency response).</p> <div style="text-align: center;">  <p>Fig. 15</p> </div> <p><b>Overall frequency response adjustment by recording bias current</b> (Recording equalizer is fixed)</p> <ol style="list-style-type: none"> <li>1. Make connections as shown in fig. 17.</li> <li>2. Place the UNIT into normal tape mode and load the test tape (QZZCRA).</li> <li>3. Input a 1 kHz, -24 dB signal through LINE IN. Place the set in record mode.</li> <li>4. Fine adjust the attenuator to obtain 0.4 V-LINE OUT output. <ul style="list-style-type: none"> <li>• Make sure that the input signal level is -24 ± 4 dB with 0.4 V output voltage</li> </ul> </li> <li>5. Adjust the attenuator to reduce the input signal level by 20 dB.</li> <li>6. Adjust the AF oscillator to generate 50 Hz, 100 Hz, 200 Hz, 500 Hz, 1 kHz, 4 kHz, 8 kHz, 10 kHz and 12 kHz signals, and record these signals on the test tape.</li> <li>7. Playback the signals recorded in step 6, and check if the frequency response curve is within the limits shown in the overall frequency response chart for normal tapes (fig. 15). (If the curve is within the charted specifications, proceed to steps 8, 9 and 10.) If the curve is not within the charted specifications, adjust as follows:</li> </ol> <div style="display: flex; justify-content: space-around;"> <div style="width: 45%;"> <p><b>Adjustment ①A:</b></p> <p>When the curve exceeds the overall frequency response chart specifications (fig. 15) as shown in fig. 18.</p> <div style="text-align: center;">  <p>Fig. 18</p> </div> </div> <div style="width: 45%;"> <p><b>Adjustment ①B:</b></p> <p>When the curve falls below the overall frequency response chart specifications (fig. 15) as shown in fig. 19.</p> <div style="text-align: center;">  <p>Fig. 19</p> </div> </div> </div>

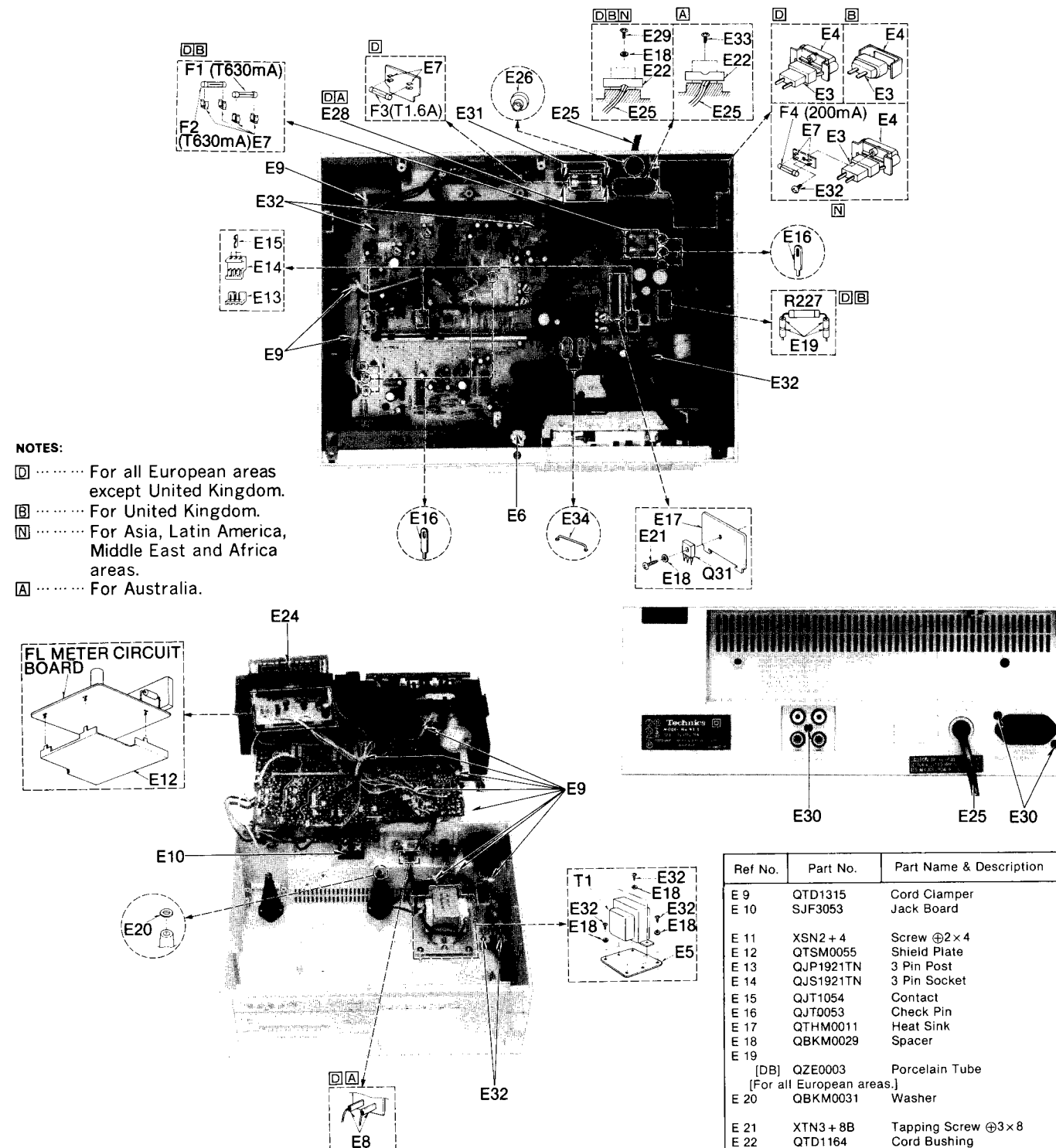
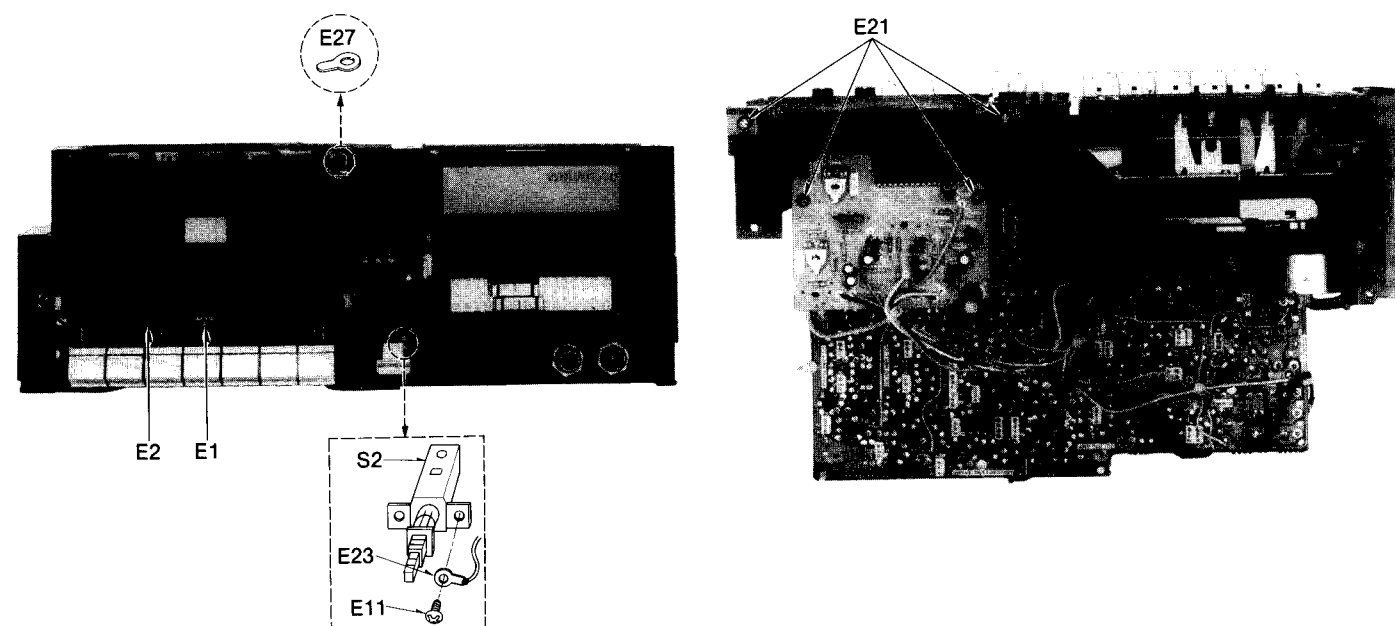
ITEM	MEASUREMENT & ADJUSTMENT
	<div data-bbox="555 237 967 501"> <ol style="list-style-type: none"> <li>1) Increase bias current by turning VR201 (L-CH) and VR202 (R-CH). (See fig. 1 on page 4.)</li> <li>2) Repeat steps 6 and 7 to confirm. (Proceed to steps 8, 9 and 10 if the curve is now within the charted specifications in fig. 15.)</li> <li>3) If the curve still exceeds the specifications (fig. 15), increase bias current further and repeat steps 6 and 7.</li> </ol> </div> <div data-bbox="1027 237 1474 479"> <ol style="list-style-type: none"> <li>1) Reduce bias current by turning VR201 (L-CH) and VR202 (R-CH).</li> <li>2) Repeat steps 6 and 7 to confirm. (Proceed to steps 8, 9 and 10 if the curve is now within the charted specifications in fig. 15.)</li> <li>3) If the curve still falls below the charted specifications (fig. 15), reduce bias current further and repeat steps 6 and 7.</li> </ol> </div> <div data-bbox="526 524 893 770"> <ol style="list-style-type: none"> <li>8. Switch the tape selector to CrO<sub>2</sub>, change test tape to QZZCRX, and record 50Hz, 100Hz, 200Hz, 500Hz, 1kHz, 4kHz, 8kHz, 10kHz, 12kHz and 14kHz signals. Then, playback the signals and check if the curve is within the limits shown in the overall frequency response chart for CrO<sub>2</sub> tapes (fig. 20).</li> </ol> </div> <div data-bbox="932 537 1461 801"> </div> <div data-bbox="1149 801 1232 833">Fig. 20</div> <div data-bbox="526 792 1461 927"> <ol style="list-style-type: none"> <li>9. Switch the tape selector to Metal, change test tape to QZZCRZ, and record 50Hz, 100Hz, 200Hz, 500Hz, 1kHz, 4kHz, 8kHz, 10kHz and 12.5kHz signals. Then, playback the signals and check if the curve is within the limits shown in the overall frequency response chart for metal tapes (fig. 20).</li> </ol> </div> <div data-bbox="517 949 1417 999"> <ol style="list-style-type: none"> <li>10. Confirm that bias currents are approximately as follows when the tape selector is set at different positions.</li> </ol> </div> <div data-bbox="539 1008 1190 1034"> <ul style="list-style-type: none"> <li>• Read voltage on VTVM and calculate bias current by following formula:</li> </ul> </div> <div data-bbox="596 1034 995 1088"> <math display="block">\text{Bias current (A)} = \frac{\text{Value read on VTVM (V)}}{10 (\Omega)}</math> </div> <div data-bbox="555 1111 1382 1196"> <p>around 400μA (Normal position)  around 600μA (CrO<sub>2</sub> position)  around 1000μA (Metal position) } : measured at TP1 (L-CH) and TP2 (R-CH)</p> </div>
<p>① Overall gain</p> <p>Condition:</p> <ul style="list-style-type: none"> <li>• Record/playback mode</li> <li>• Normal tape mode</li> <li>• Input level controls ... MAX</li> <li>• Standard input level;  MIC ..... -72 ± 3.5 dB  LINE IN ... -24 ± 3.5 dB</li> </ul> <p>Equipment:</p> <ul style="list-style-type: none"> <li>• VTVM</li> <li>• AF oscillator</li> <li>• ATT</li> <li>• Oscilloscope</li> <li>• Resistor (600Ω)</li> <li>• Test tape (reference blank tape) ... QZZCRA for Normal</li> </ul>	<ol style="list-style-type: none"> <li>1. Test equipment connection is shown in fig. 21.</li> <li>2. Place the UNIT into normal tape mode and load the test tape (QZZCRA).</li> <li>3. Place UNIT into record mode.</li> <li>4. Supply 1 kHz signal (-24 dB) from AF oscillator, through ATT to LINE IN.</li> <li>5. Adjust ATT until monitor level at LINE OUT becomes 0.4V.</li> <li>6. Playback recorded tape, and make sure the value at LINE OUT on VTVM becomes 0.4V.</li> <li>7. If measured value is not 0.4V, adjust VR5 (L-CH), VR6 (R-CH) (See fig. 2 on page 4).</li> <li>8. Repeat from step (2).</li> </ol> <div data-bbox="1091 1272 1461 1496"> </div> <p style="text-align: center;">Fig. 21</p>
<p>② Fluorescent meter</p> <p>Condition:</p> <ul style="list-style-type: none"> <li>• Record mode</li> <li>• Input level controls .... MAX</li> </ul> <p>Equipment:</p> <ul style="list-style-type: none"> <li>• VTVM</li> <li>• AF oscillator</li> <li>• ATT</li> <li>• Oscilloscope</li> <li>• Resistor (600Ω)</li> </ul>	<ol style="list-style-type: none"> <li>1. Test equipment connection is shown in fig. 21.</li> <li>2. As shown in fig. 22, connect the base of Q33 and ground.</li> <li>3. Supply 1 kHz signal (-24 dB) to the LINE IN jack, then press the record button.</li> <li>4. Adjust the ATT so that the output level at LINE OUT jack becomes 0.4V (The input level at this condition is termed the standard input level).</li> <li>5. Adjustment at "-20 dB": <ol style="list-style-type: none"> <li>A. Adjust the ATT so that input level is -20 dB below standard recording level.</li> <li>B. Adjust VR7 so that the -20 dB segment lights up in the -20 ± 0.8 dB range (L-CH ONLY) (See fig. 23).</li> </ol> </li> </ol> <div data-bbox="1018 1724 1461 1989"> </div> <p style="text-align: center;">Fig. 22</p>



ITEM	MEASUREMENT & ADJUSTMENT
	<p>6. Adjustment at "0dB":</p> <p>A. Adjust the ATT so that the output level at LINE OUT jack becomes 0.4V. (The input level at this condition is termed the standard input level.)</p> <p>B. Adjust VR8 so that the +1 dB segment lights up in the 0±0.2dB range of the standard input level (See fig. 24).</p> <p>7. Repeat twice between steps 5 and 6 above.</p> <p>8. Adjust ATT and check that all segments light up when an input signal level is increased to 10dB higher than the standard input level (See fig. 25).</p>
<p>Ⓚ Dolby NR circuit</p> <p>Condition:</p> <ul style="list-style-type: none"> <li>Record mode</li> <li>Dolby NR switch... IN/OUT</li> <li>Input level controls... MAX</li> </ul> <p>Equipment:</p> <ul style="list-style-type: none"> <li>VTVM</li> <li>AF oscillator</li> <li>ATT</li> <li>Oscilloscope</li> <li>Resistor (600Ω)</li> </ul>	<p>1. Test equipment connection is shown in fig. 26.</p> <p>2. Place UNIT into record mode, set the Dolby NR switch to OUT position and supply to LINE IN to obtain -34.5dB at TP5 (L-CH), TP6 (R-CH) (frequency 5kHz).</p> <p>3. Confirm that the value at IN position is 8(±2.5)dB greater than the value at OUT position of Dolby NR switch.</p>

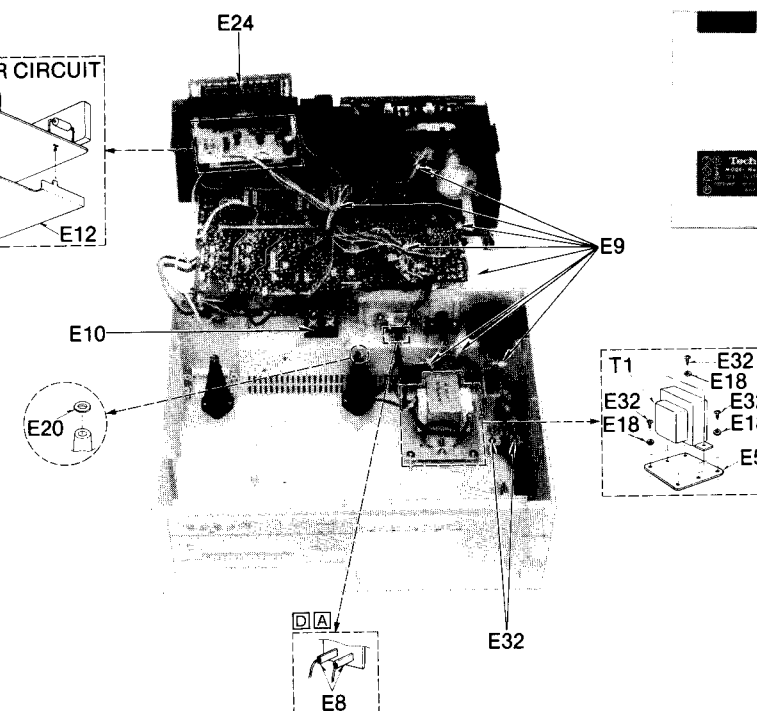
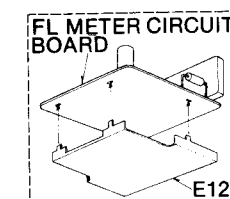


# ELECTRICAL PARTS LOCATION



## NOTES:

- [DB] For all European areas except United Kingdom.
- [A] For United Kingdom.
- [N] For Asia, Latin America, Middle East and Africa areas.
- [DA] For Australia.



## REPLACEMENT PARTS LIST

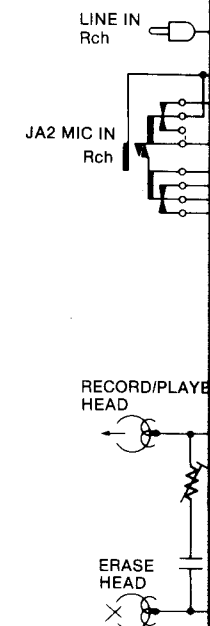
Important safety notice  
Components identified by Δ mark have special characteristics important for safety.  
When replacing any of these components, use only manufacturer's specified parts.

Ref No.	Part No.	Part Name & Description
<b>ELECTRICAL PARTS</b>		
E 1	QWY4122Z	Record/Playback Head
E 2	QWY2138Z	Erase Head
E 3	[B] Δ SJS9225	AC Outlet Socket
	[For United Kingdom.]	
[DN] Δ SJS9225		AC Outlet Socket
	[For all European areas except United Kingdom, Asia, Latin America, Middle East and Africa areas.]	

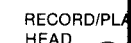
Ref No.	Part No.	Part Name & Description
E 4	[B] QMAM0154	AC Outlet Socket Holding
	[For United Kingdom]	Angle
[DN] QKJM0086		AC Outlet Socket Holding
	Plate	
	[For all European areas except United Kingdom, Asia, Latin America, Middle East and Africa areas.]	
E 5	QMFM0016	Transformer Holding Plate
E 6	QTSM0045	Shield Plate
E 7	[D] Δ QTF1054	Fuse Holder
	[For all European areas except United Kingdom.]	
[N] Δ QTF1051		Fuse Holder
	[For Asia, Latin America, Middle East and Africa areas.]	
E 8	[DA] SJT777	Terminal
	[For all European areas and Australia.]	

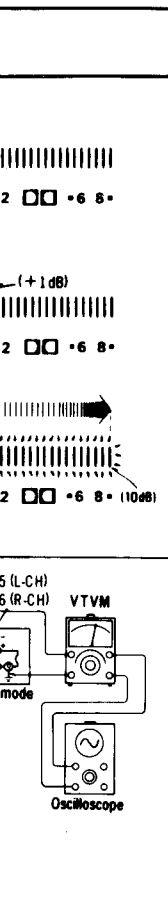
Ref No.	Part No.	Part Name & Description
E 9	QTD1315	Cord Clamper
E 10	SJF3053	Jack Board
E 11	XSN2+4	Screw Φ2×4
E 12	QTSM0055	Shield Plate
E 13	QJP1921TN	3 Pin Post
E 14	QJS1921TN	3 Pin Socket
E 15	QJT1054	Contact
E 16	QJT0053	Check Pin
E 17	QTHM0011	Heat Sink
E 18	QBKM0029	Spacer
E 19	[DB] QZE0003	Porcelain Tube
	[For all European areas.]	
E 20	QBKM0031	Washer
E 21	XTN3+8B	Tapping Screw Φ3×8
E 22	QTD1164	Cord Bushing
E 23	QTD1317	Lug Terminal
E 24	QSIFL006F	FL Meter
E 25	[B] Δ SJA149	AC Power Cord
	[For United Kingdom.]	
[A] Δ QFC1208M		AC Power Cord
	[For Australia.]	
[DN] Δ SJA151		AC Power Cord
	[For all European areas except United Kingdom, Asia, Latin America, Middle East and Africa areas.]	
E 26	QBJ1425	Cord Bushing
E 27	QTD1001	Lug Terminal
E 28	[DB] Δ QBK7178	Washer
	[For all European areas.]	
E 29	XTN3+16B	Tapping Screw Φ3×16
E 30	XTB3+10BFZ	Tapping Screw Φ3×10
E 31	XTN3+8B	Tapping Screw Φ3×8
E 32	XTN3+10B	Tapping Screw Φ3×10
E 33	XTB3+12B	Screw Φ3×12
E 34	QJT1077	Jumper Wire

## RECORD ST



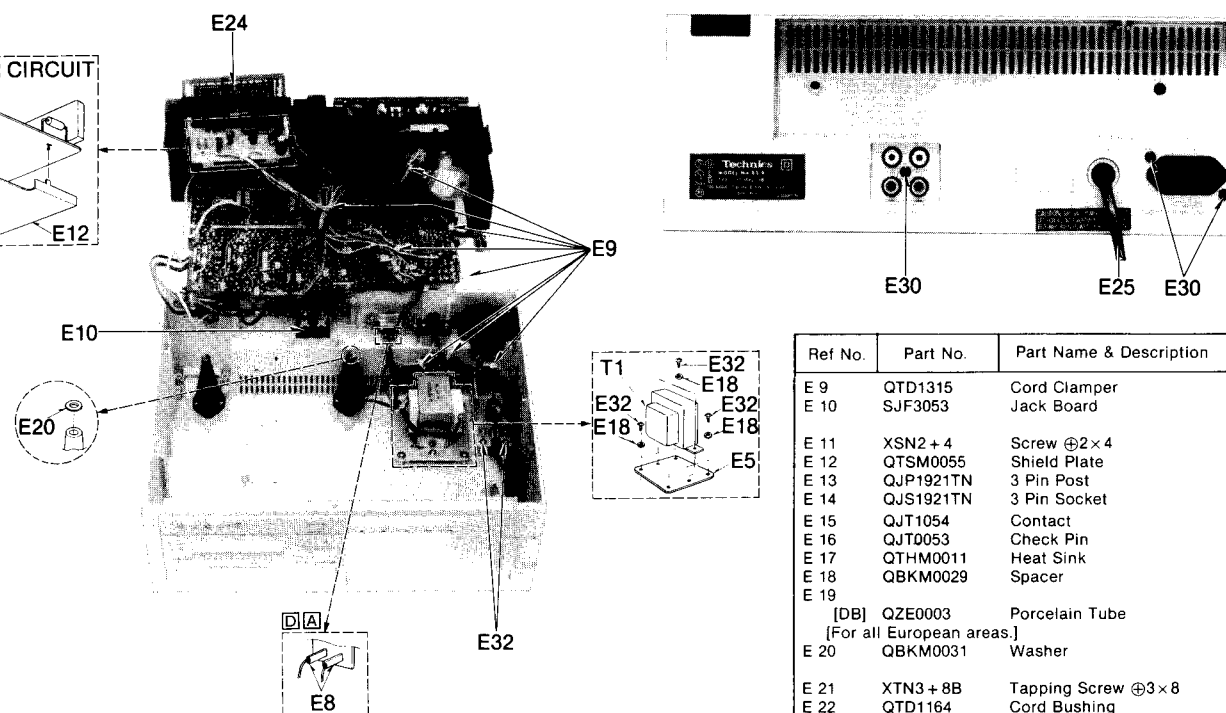
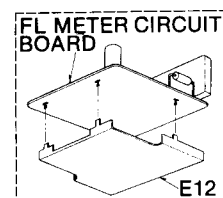
## PLAYBACK





## NOTES:

- [D] ..... For all European areas except United Kingdom.  
 [B] ..... For United Kingdom.  
 [N] ..... For Asia, Latin America, Middle East and Africa areas.  
 [A] ..... For Australia.



## REPLACEMENT PARTS LIST

Important safety notice  
Components identified by  $\Delta$  mark have special characteristics important for safety.  
When replacing any of these components, use only manufacturer's specified parts.

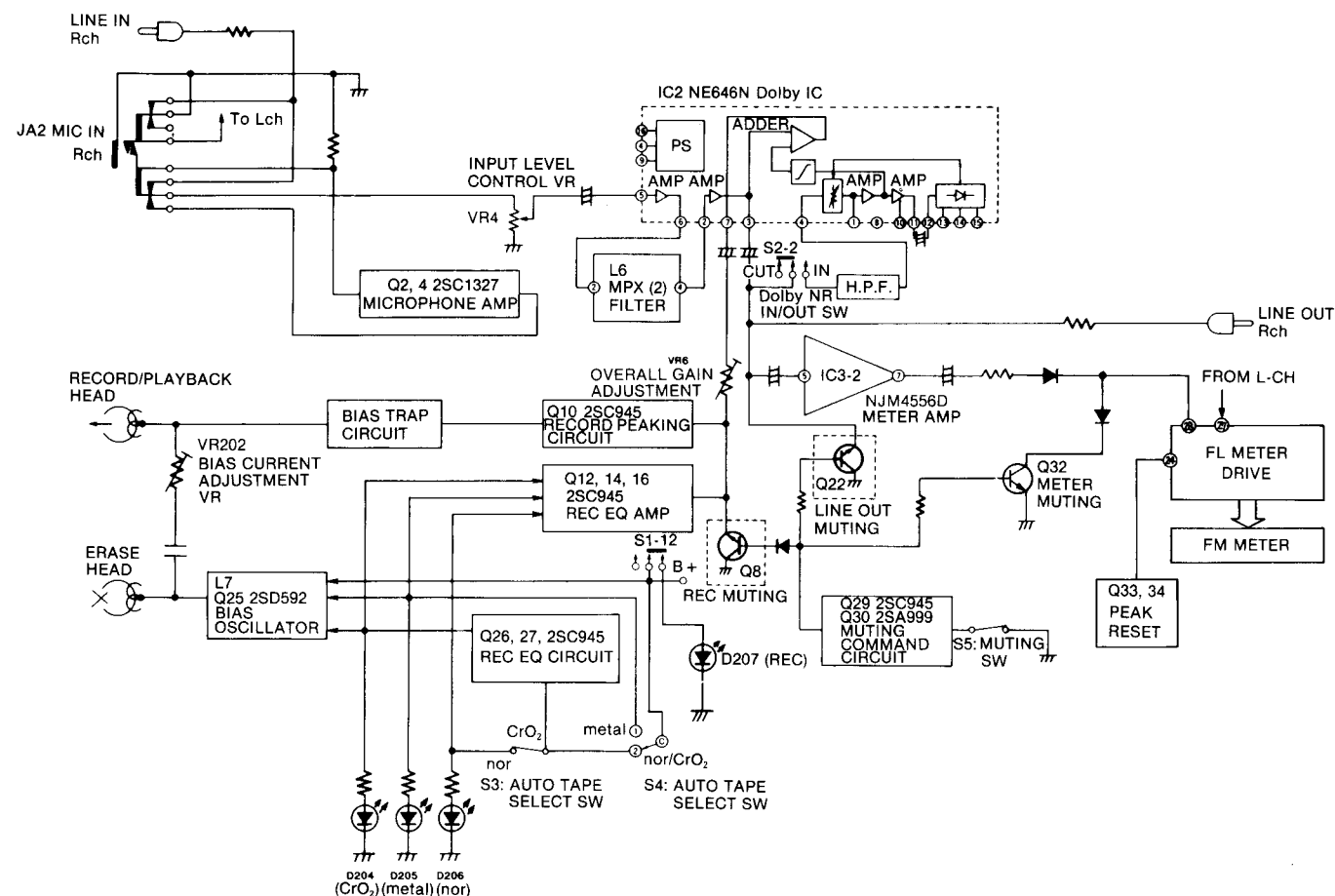
Ref No.	Part No.	Part Name & Description
<b>ELECTRICAL PARTS</b>		
E 1	QWY4122Z	Record/Playback Head
E 2	QWY2138Z	Erase Head
E 3	[B] $\Delta$ SJS9225	AC Outlet Socket
	[For United Kingdom.]	
[DN] $\Delta$ SJS9225		AC Outlet Socket
	[For all European areas except United Kingdom, Asia, Latin America, Middle East and Africa areas.]	

Ref No.	Part No.	Part Name & Description
E 4	[B] QMAM0154	AC Outlet Socket Holding
	[For United Kingdom.]	Angle
[DN] QKJM0086		AC Outlet Socket Holding
	[For all European areas except United Kingdom, Asia, Latin America, Middle East and Africa areas.]	
E 5	QMFM0016	Transformer Holding Plate
E 6	QTS00045	Shield Plate
E 7	[D] $\Delta$ QTF1054	Fuse Holder
	[For all European areas except United Kingdom.]	
[N] $\Delta$ QTF1051		Fuse Holder
	[For Asia, Latin America, Middle East and Africa areas.]	
E 8	[DA] SJT777	Terminal
	[For all European areas and Australia.]	

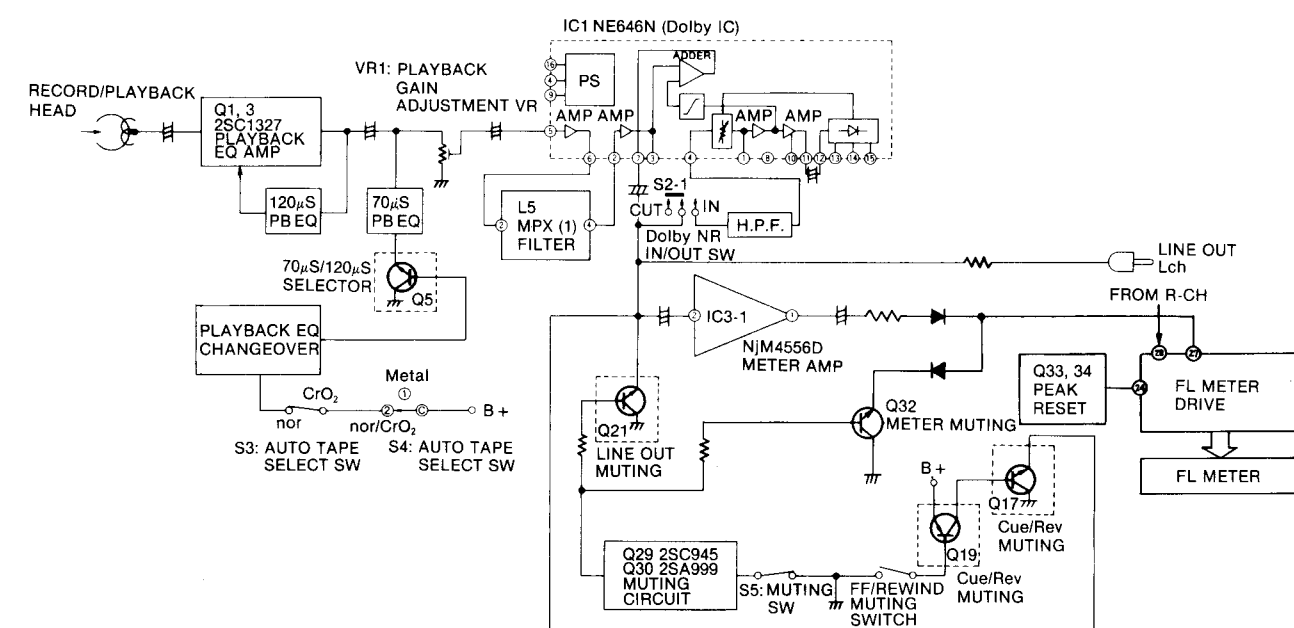
Ref No.	Part No.	Part Name & Description
E 9	QTD1315	Cord Clamper
E 10	SJF3053	Jack Board
E 11	XSN2+4	Screw $\phi 2 \times 4$
E 12	QTS00055	Shield Plate
E 13	QJP1921TN	3 Pin Post
E 14	QJS1921TN	3 Pin Socket
E 15	QJT1054	Contact
E 16	QJT0053	Check Pin
E 17	QTHM0011	Heat Sink
E 18	QBKM0029	Spacer
E 19	[DB] QZE0003	Porcelain Tube
	[For all European areas.]	
E 20	QBKM0031	Washer
E 21	XTN3+8B	Tapping Screw $\phi 3 \times 8$
E 22	QTD1164	Cord Bushing
E 23	QTD1317	Lug Terminal
E 24	QSIFL006F	FL Meter
E 25	[B] $\Delta$ SJA149	AC Power Cord
	[For United Kingdom.]	
[A] $\Delta$ QFC1208M		AC Power Cord
	[For Australia.]	
[DN] $\Delta$ SJA151		AC Power Cord
	[For all European areas except United Kingdom, Asia, Latin America, Middle East and Africa areas.]	
E 26	QBJ1425	Cord Bushing
E 27	QTD1001	Lug Terminal
E 28	[DB] $\Delta$ QBK7178	Washer
	[For all European areas.]	
E 29	XTN3+16B	Tapping Screw $\phi 3 \times 16$
E 30	XTB3+10BFZ	Tapping Screw $\phi 3 \times 10$
E 31	XTN3+8B	Tapping Screw $\phi 3 \times 8$
E 32	XTN3+10B	Tapping Screw $\phi 3 \times 10$
E 33	XTB3+12B	Screw $\phi 3 \times 12$
E 34	QJT1077	Jumper Wire

## BLOCK DIAGRAM

## RECORD SYSTEM (R-CH ONLY)

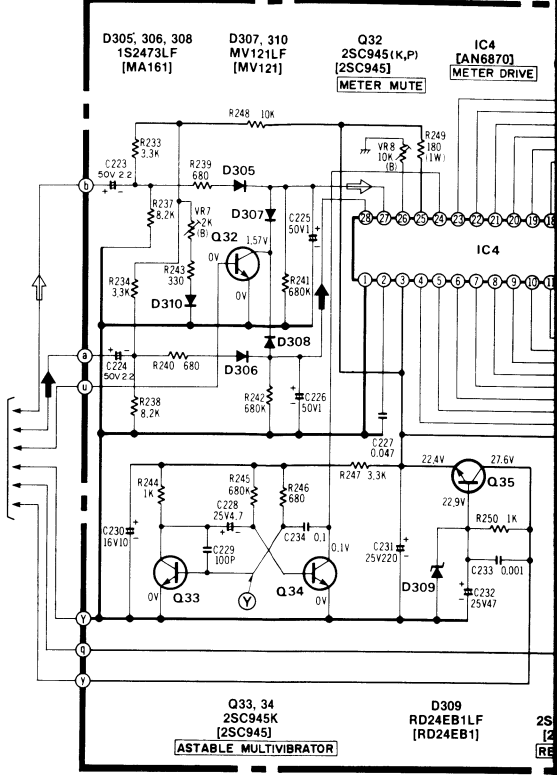
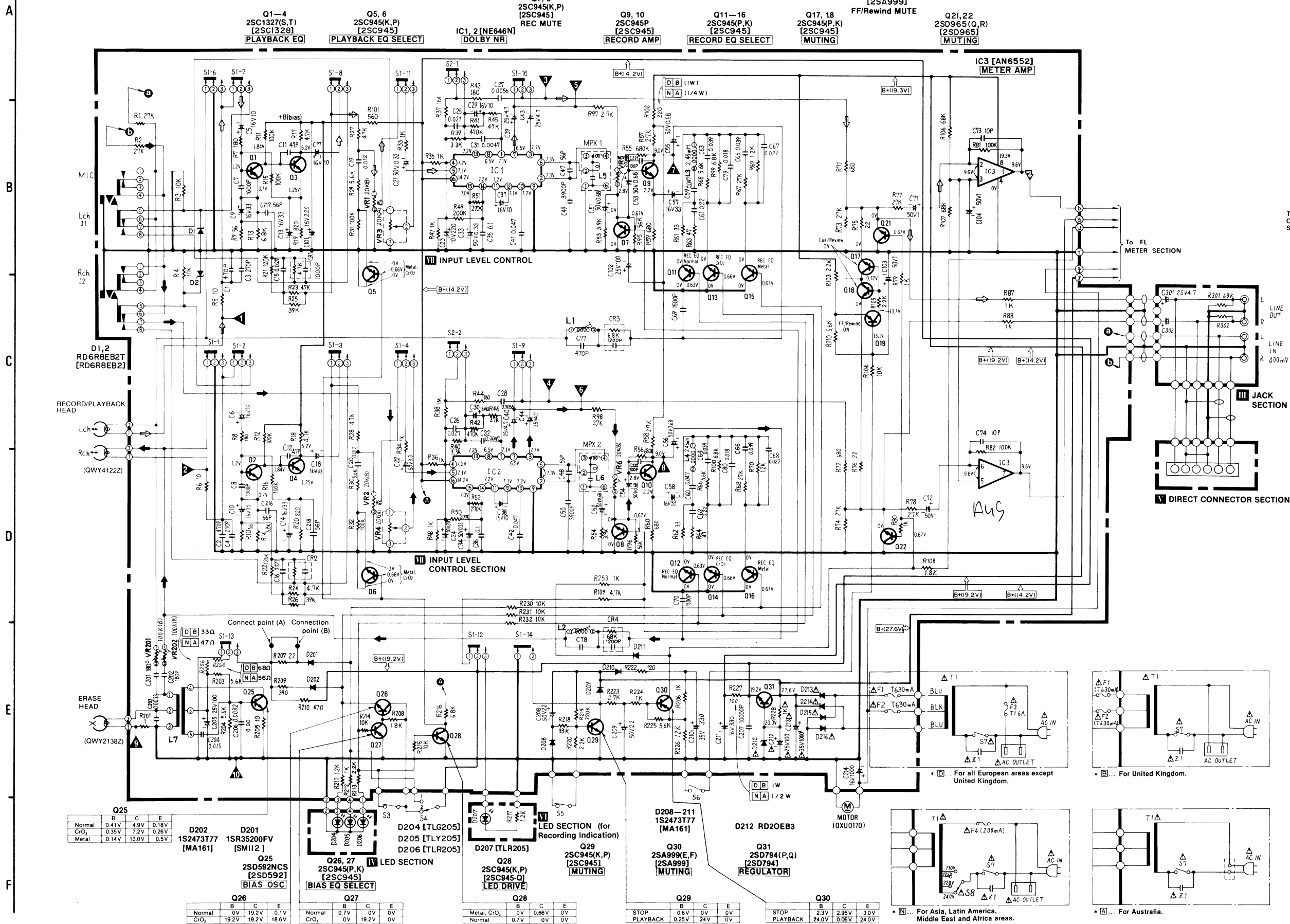


## PLAYBACK SYSTEM (L-CH ONLY)



SCHEMATIC DIAGRAM  
I MAIN CIRCUIT SECTION

II FL METER SECTION

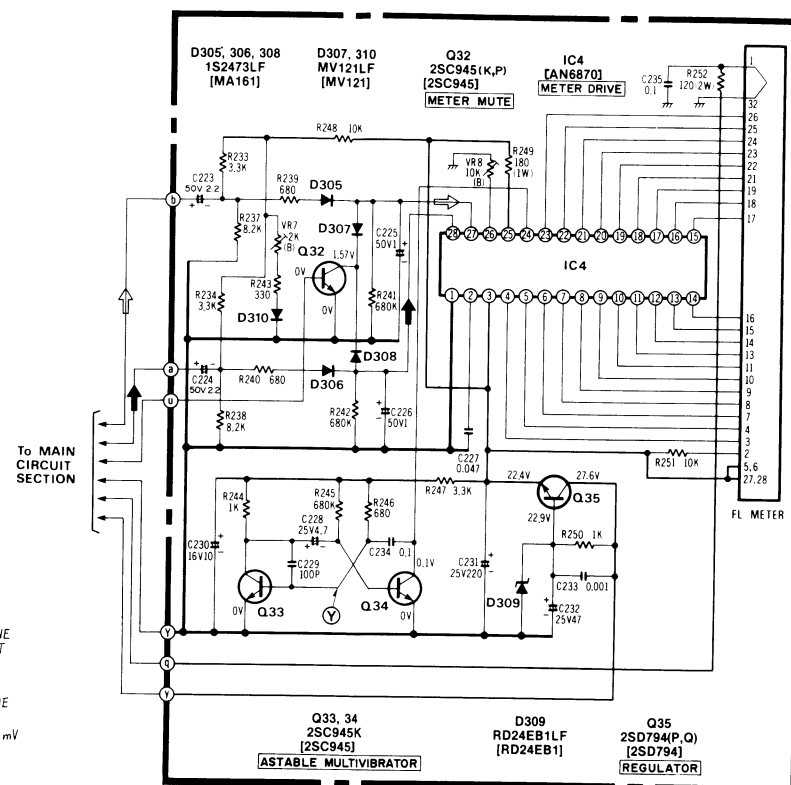
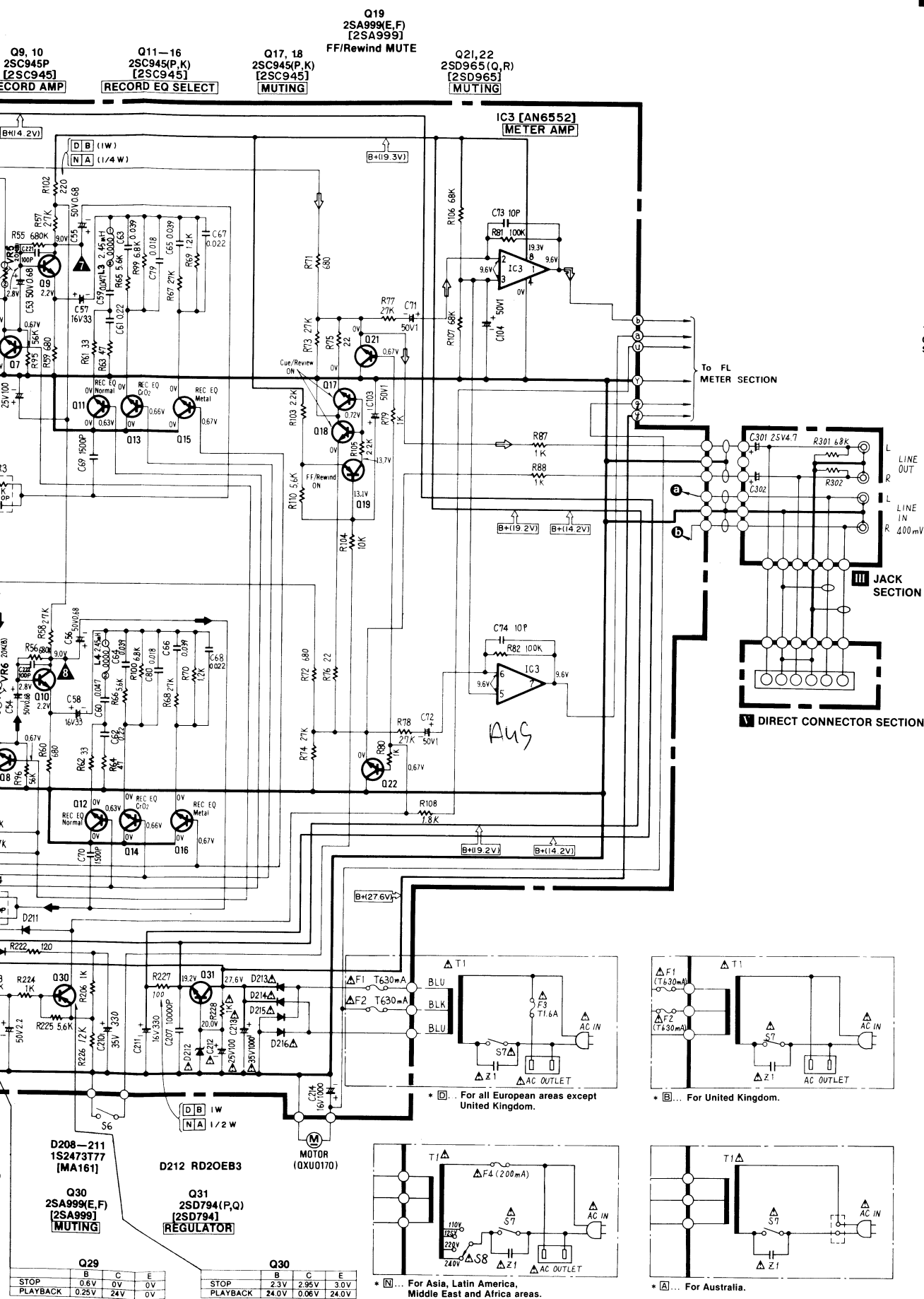


SPECIFICATIONS

Playback S/N ratio	More than 60dB
* Test tape...QZZCFM	(with 100mV)
Overall distortion	Less than 0.5%
* Test tape	Less than 0.5%
...QZZCRA for Normal	
...QZZCRX for CrO2	
...QZZCRX for Metal	
Overall S/N ratio	More than 60dB
* Test tape...QZZCRX	(with 100mV)

- NOTES:
- S1-1—S1-14.....Record/Playback select switch (shown in playback position)
  - S2-1—S2-2.....Dolby NR IN/OUT select switch (shown in out position)
  - S3.....Auto tape select switch (shown in Normal position).
  - S4.....Auto tape select switch.
  - (1....Metal position, 2....Normal position, CrO2 position)
  - S5.....Muting switch.
  - S6.....FF/Rewind muting switch.
  - S7.....Power ON/OFF switch.
  - S8.....AC power voltage select switch.
  - \* For Asia, Latin America, Middle East and Africa areas
  - VR1,2.....Playback gain adjustment VR.
  - VR3,4.....Input level controls.
  - VR5,6.....Overall gain adjustment VR.
  - VR7.....FL meter adjustment VR (for -20dB indication).
  - VR8.....FL meter adjustment VR (for 0dB indication).
  - VR201,202.....Bias current adjustment VR.
  - L1,2.....Bias leakage adjustment coil.
  - Connection points (A) and (B).....For erase current adjustment.
  - Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.
  - 1K=1,000Ω, M=1,000KΩ.
  - Capacity are micro farads (μF) unless specified otherwise.
  - P=Pico-farads.
  - The mark (▼) shows test point. e.g. ▼ = Test point 1.
  - (→) this arrow indicates the flow of the playback signal.
  - (→) this arrow indicates the flow of the recording signal.

## II FL METER SECTION



## SPECIFICATIONS


\* Input level controls ..... MAX





Playback S/N ratio • Test tape...QZZCFM	More than 45dB (without NAB filter)
Overall distortion • Test tape ...QZZCRA for Normal ...QZZCRX for CrO <sub>2</sub> ...QZZCRZ for Metal	Less than 3 % (Normal) Less than 3.5 % (CrO <sub>2</sub> , Metal)
Overall S/N ratio • Test tape...QZZCRX	More than 46dB (without NAB filter)

**NOTES:**

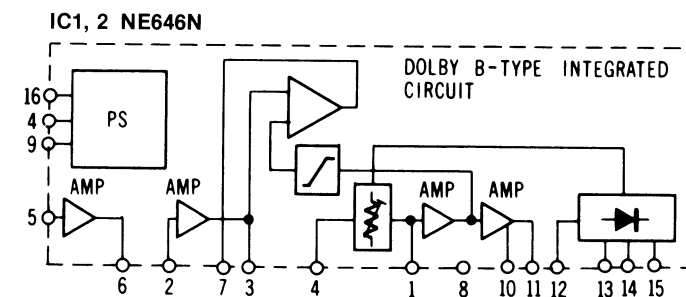
- S11—S14.....Record/Playback select switch (shown in playback position).
- S21—S22.....Dolby NR IN/OUT select switch (shown in out position).
- S3.....Auto tape select switch (shown in Normal position).
- S4.....Auto tape select switch.  
(1...Metal position, 2...Normal position, CrO<sub>2</sub> position)
- S5.....Muting switch.
- S6.....FF/Rewind muting switch.
- S7.....Power ON/OFF switch.
- S8.....AC power voltage select switch.  
\* For Asia, Latin America, Middle East and Africa areas.
- VR1, 2.....Playback gain adjustment VR.
- VR3, 4.....Input level controls.
- VR5, 6.....Overall gain adjustment VR.
- VR7.....FL meter adjustment VR (for -20dB indication).
- VR8.....FL meter adjustment VR (for 0dB indication).
- VR201, 202.....Bias current adjustment VR.
- L1, 2.....Bias leakage adjustment coil.
- Connection points (A) and (B).....For erase current adjustment.
- Resistance are in ohms (Ω), 1/4 watt unless specified otherwise.  
1 K = 1,000Ω, M = 1,000 KΩ.
- Capacity are micro farads (μF) unless specified otherwise.  
P = Pico-farads.
- The mark (▼) shows test point. e.g. ▼ = Test point 1.
- (⇒) this arrow indicates the flow of the playback signal.
- (⇒) this arrow indicates the flow of the recording signal.

- All voltage values shown in circuitry are under no signal condition.
    - Unless otherwise specified, voltage measurement conditions are that tape travel is at STOP, tape mode at NORMAL, and Dolby NR switch at OFF.
    - Normal .....Voltage at normal tape mode
    - Cue/review OFF.....Voltage at modes other than cue/review
    - Stop .....Voltage at stop mode
    - Playback.....Voltage at playback mode
    - For measurement, use VTVM.
  - Important safety notice
 

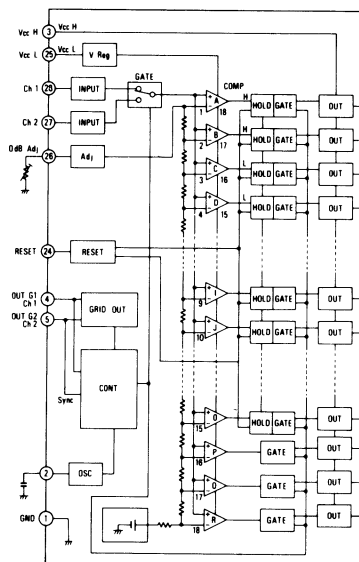
Components identified by  mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
  - Described in the schematic diagram are two types of number; the supply parts number and production parts number for transistors and diodes. One type of number is used for supply parts number and production parts number when they are identical.
- e.g. Q1
- |   |              |                           |
|---|--------------|---------------------------|
| { | 2SC1327(S,T) | — Production parts number |
| { | [2SC1328]    | — Supply parts number     |
|   | D208         |                           |
| { | 1S2473T77    | — Production parts number |
| { | [MA161]      | — Supply parts number     |
- The supply parts number is described alone in the replacement parts list.
 

	.....For all European areas except United Kingdom.
	.....For United Kingdom.
	.....For Asia, Latin America, Middle East and Africa areas.
	.....For Australia.

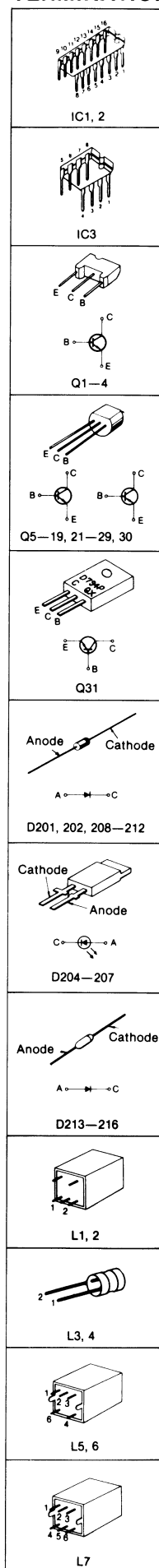
### EQUIVALENT CIRCUIT



**IC4 AN6870**

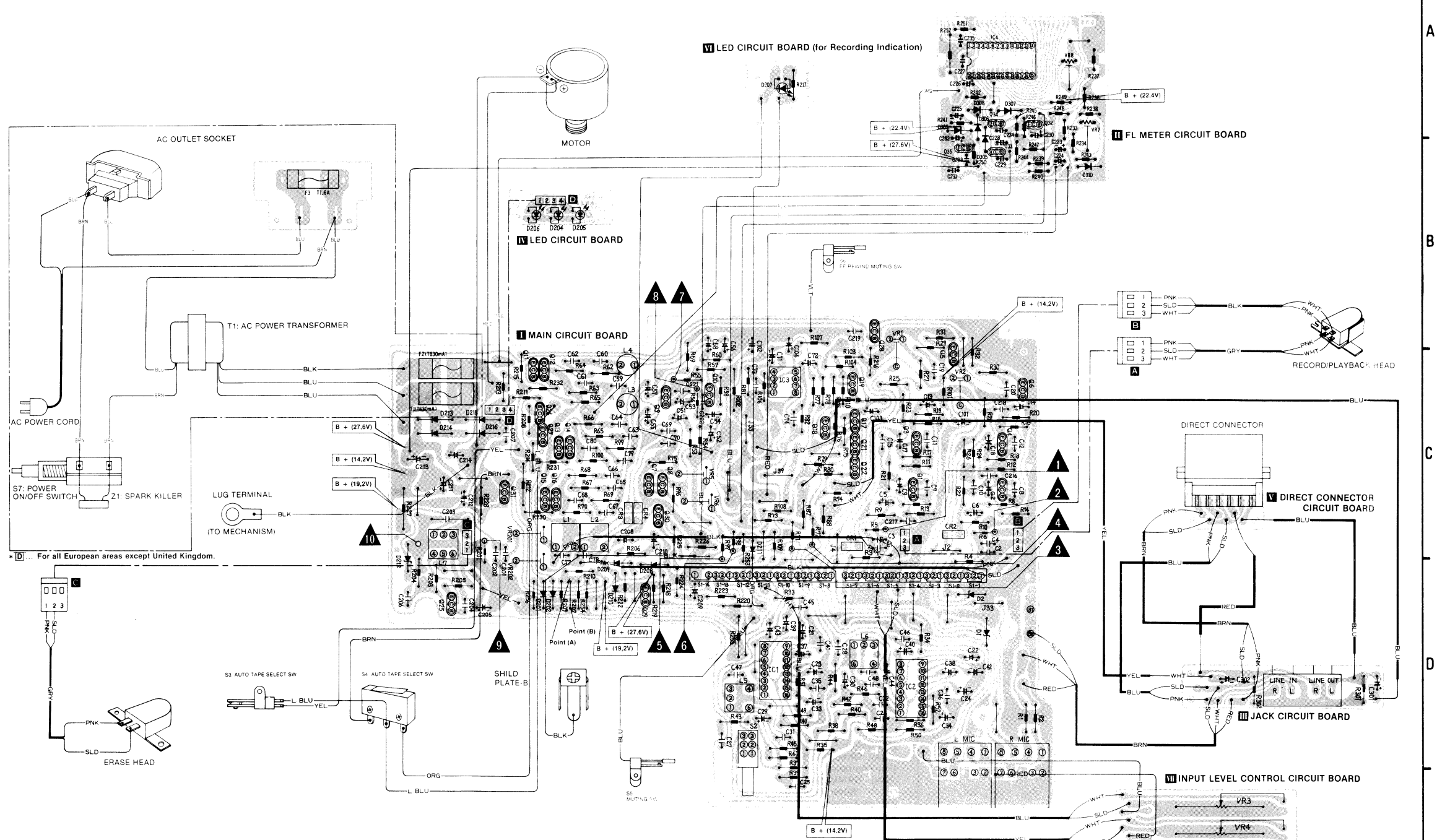
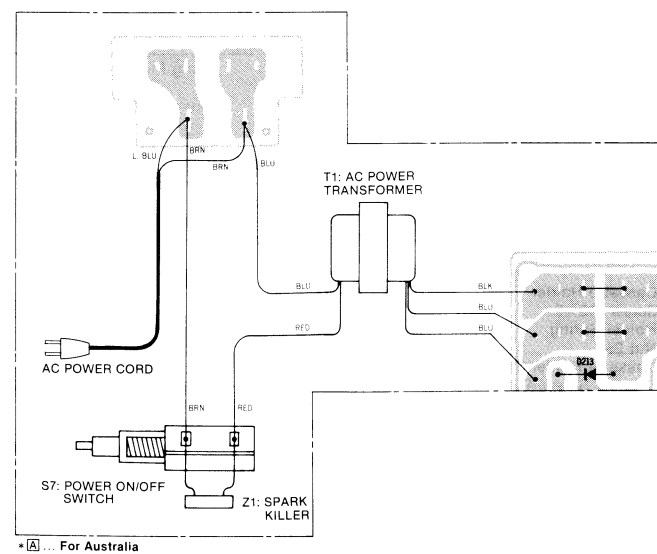
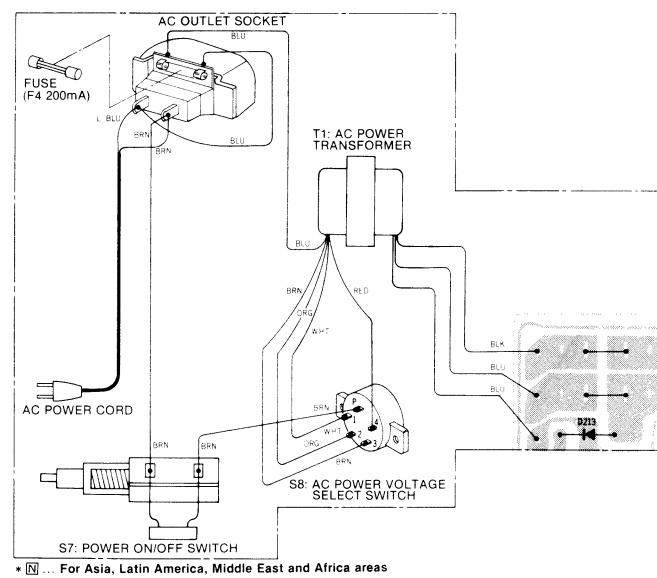
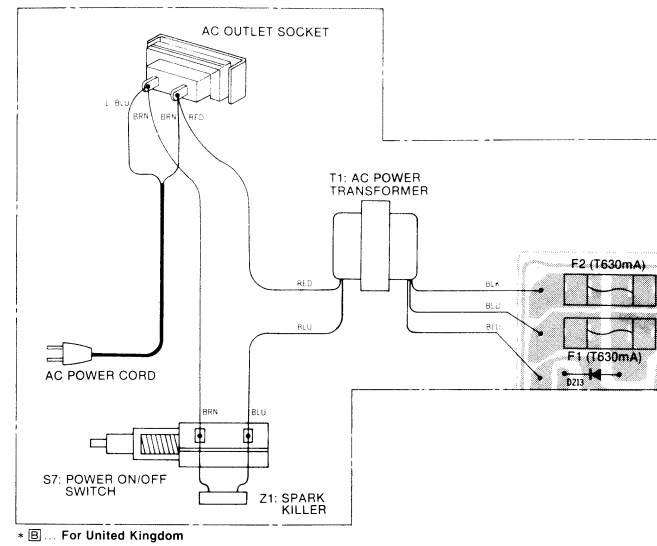


## TERMINATIONS





## CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM



## NOTES:

BLK .....Black  
 BLU .....Blue  
 BRN .....Brown  
 GRY .....Gray  
 GRN .....Green  
 L. BLU .....Light Blue  
 NIL .....No Color Mark  
 ORG .....Orange  
 PNK .....Pink  
 RED .....Red  
 SLD .....Shield Wire  
 VLT .....Violet  
 WHT .....White  
 YEL .....Yellow

## NOTES:

- The circuit shown in [ ] on the conductor indicates printed circuit on the back side of the printed circuit board.
- Values indicated in [ ] are DC voltage between the ground and electrical parts.
- All voltage values shown in circuitry are under no signal condition. Unless otherwise specified, voltage measurement conditions are that tape travel is at STOP, tape mode at NORMAL, and Dolby NR switch at OFF.  
 Normal ..... Voltage at normal tape mode  
 Cue/review OFF ..... Voltage at modes other than cue/review  
 Stop ..... Voltage at stop mode  
 Playback ..... Voltage at playback mode  
 For measurment, use VTVM.

- The supply parts number is described alone in the replacement parts list.

- This circuit board diagram may be modified at any time with the development of new technology.

## IC 1.2 [NE646N]

1	7.1V	9	0V
2	7.3V	10	7.2V
3	7.7V	11	7.2V
4	7.2V	12	7.1V
5	7.1V	13	7.2V
6	7.3V	14	7.2V
7	6.5V	15	7.0V
8	6.5V	16	14.2V

## IC:

1	9.6V
2	9.6V
3	9.6V
4	0V
5	9.6V
6	9.6V
7	9.6V
8	19.3V

## Q 1.2 [2SC1328]

B	1.2V
C	1.84V
E	0.7V

## Q 3.4 [2SC1328]

B	1.84V
C	5.2V
E	1.25V

## Q 5.6 [2SC945]

B	0.66V
C	0V
E	0V

## Q 1.2 [2SC945]

B	0.63V
C	0V
E	0V

## Q 1.2 [2SC945]

B	0.67V
C	0V
E	0V

## Q 1.2 [2SC945]

B	0.67V
C	0V
E	0V

## Q 1.2 [2SC945]

B	0.67V
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C	0V
E	0V

## Q 1.2 [2SC945]

B	0.67V
C	0V
E	0V

## Q 1.2 [2SC945]

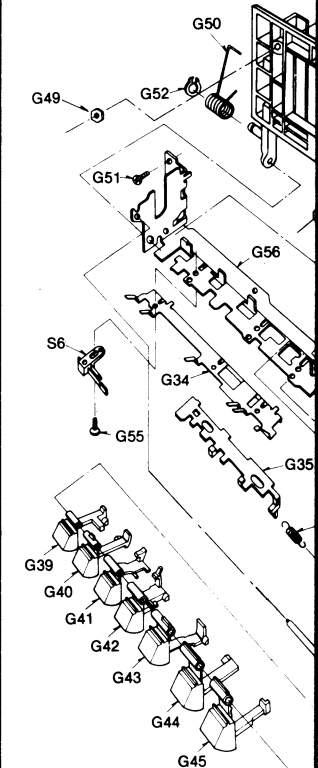
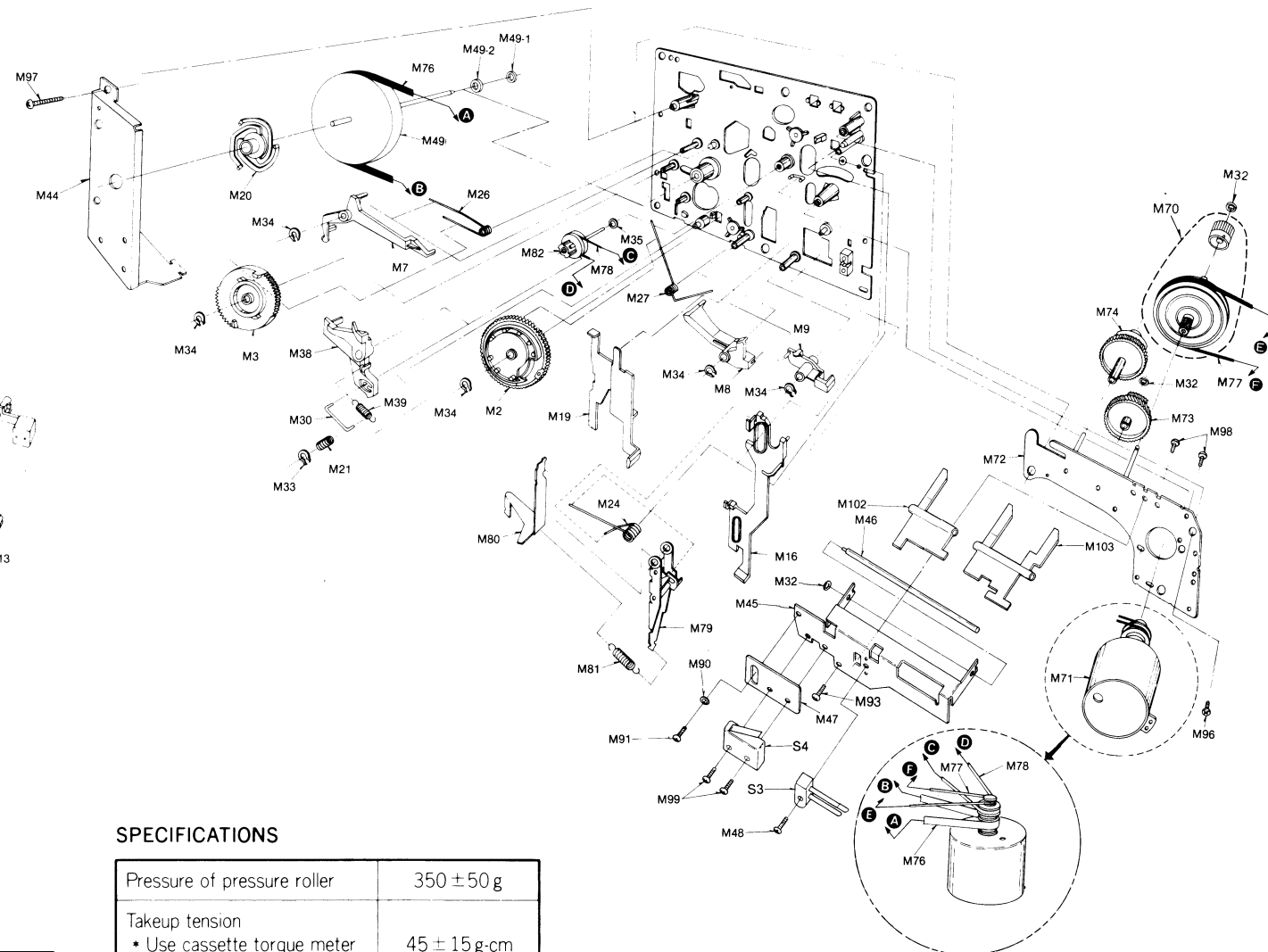
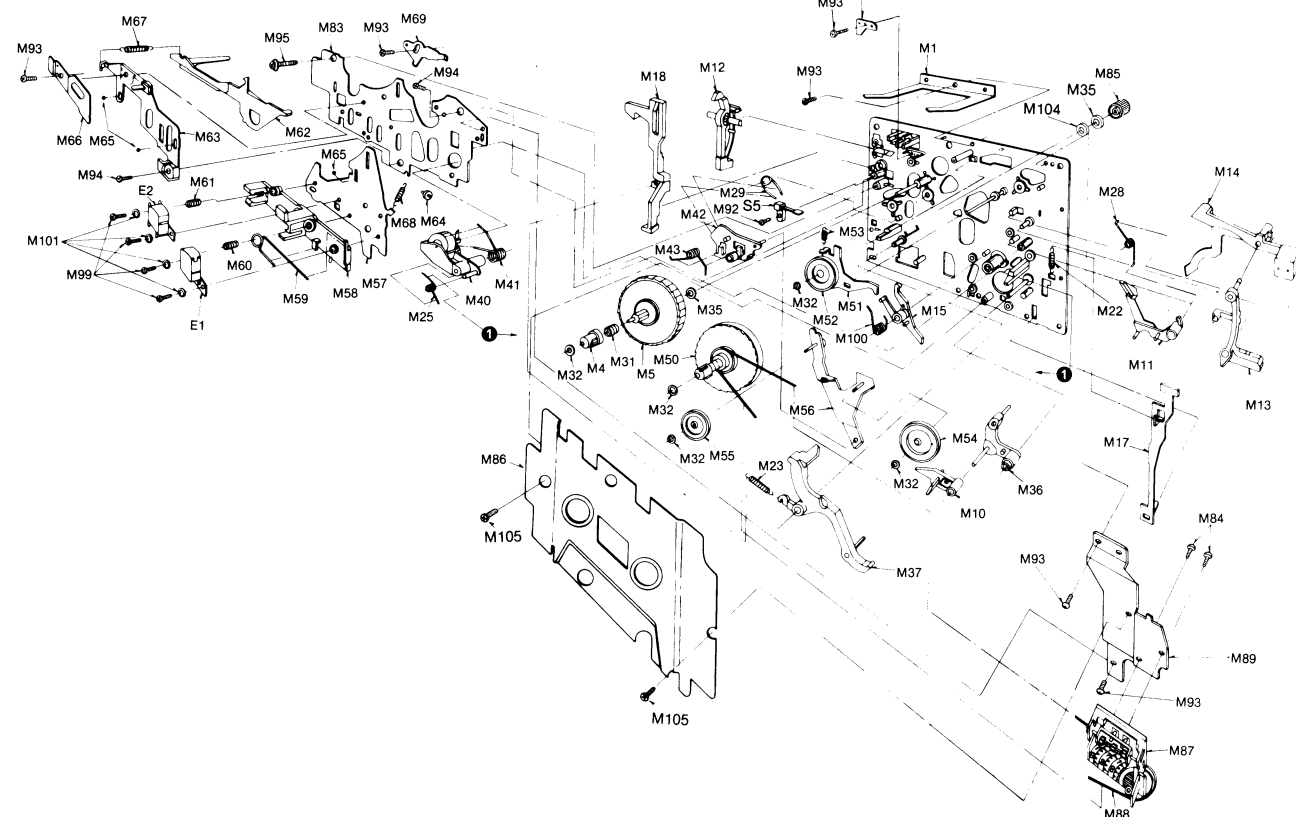
B
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Ref No.	Part No.	Part Name & Description
<b><u>COILS</u></b>		
L 1, 2	QLQX1032W	Bias Tap Coil
L 3, 4	QLQX2421Y	Peaking Coil
L 5, 6	SLM1Z19	MPX Filter
L 7	QLB0198	Bias Oscillation Coil
<b><u>TRANSFORMER</u></b>		
T 1	[D] Δ QLPD72EKE	AC Power Transformer [For all European areas except United Kingdom.]
	[N] Δ QLPN75EKE	AC Power Transformer [For Asia, Latin America, Middle East and Africa areas.]
	[BA] Δ QLPZ20EKE	AC Power Transformer [For United Kingdom and Australia.]
<b><u>FUSES</u></b>		
F 1, 2	[DB] Δ XBAQ0008	Fuse (T 630mA) [For all European areas.]
F 3	[D] Δ XBAQ0010	Fuse (T 1.6A) [For all European areas except United Kingdom.]
F 4	[N] Δ XBA2F02NM100	Fuse (200mA) [For Asia, Latin America, Middle East and Africa areas.]
<b><u>SWITCHES</u></b>		
S 1	QSSE203	Slide Switch (Record/Playback Selector)
S 2	QSW2232	Push Switch (Dolby IN/OUT)
S 3	QSB0253	Leaf Switch (Auto Tape Selector)
S 4	AH32229	Micro Switch (Auto Tape Selector)
S 5	QSB0251	Leaf Switch (Rec-Mute ON/OFF)
S 6	QSB0251	Leaf Switch (Fast Forward/Rewind Muting)
S 7	Δ QSW1117AS	Push Switch (Power ON/OFF)
S 8	[N] Δ QSR1407H	Rotary Switch (Voltage Selector) [For Asia, Latin America, Middle East and Africa areas.]
<b><u>JACKS</u></b>		
J 1, 2	QJA0253	Microphone Jack

— 17 —

## MECHANICAL PARTS LOCATION



When servicing this mechanism unit, refer to the disassembly notes and assembly instructions described in the service manuals of RS-M51, RS-M13, RS-M14 and RS-M04 (RS-M24 mechanism series).

## SPECIFICATIONS

Pressure of pressure roller	350 ± 50 g
Takeup tension • Use cassette torque meter ... QZZSRKCT	45 ± 15 g-cm
Wow and flutter: (JIS) • Use test tape ... QZZCWAT	Less than 0.06% (WRMS)

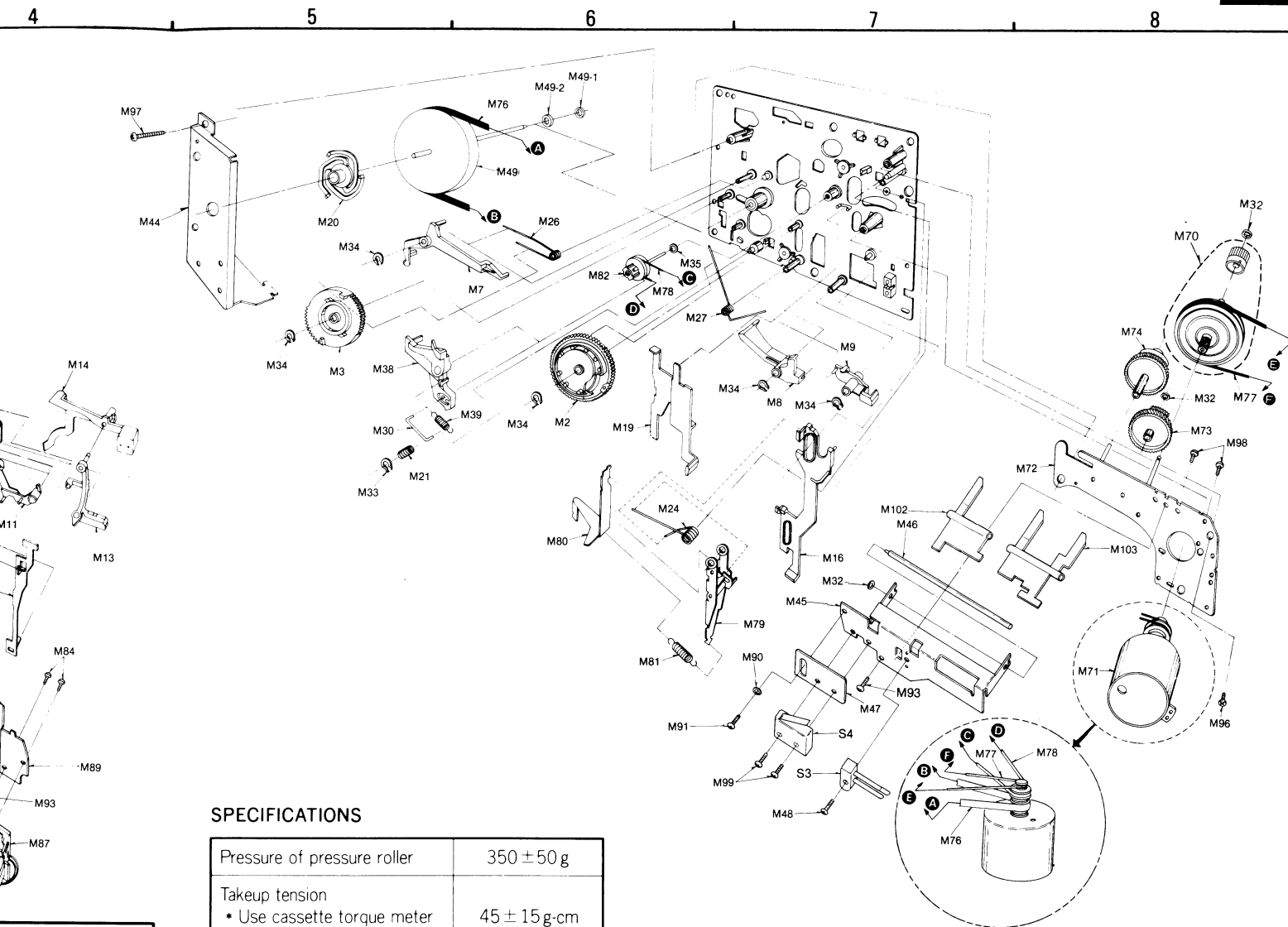
## REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
<b>MECHANICAL PARTS</b>											
M1	QBP1874	Cassette Pressure Spring	M27	QBN1802	Main Gear Spring	M52	QX10111	Takeup Idler Assembly	M80	QML3580	Record/Playback Selection Lever
M2	QDG1201	Main Gear	M28	QBN1746	Auto-Stop Lever Spring	M53	QBT1893	Takeup Idler Spring	M81	QBT1895	Record/Playback Selection Lever Spring
M3	QDG1202	Sub Gear	M29	QBN1747	Connection Spring	M54	QX10113	Fast Forward Idler Assembly	M82	QXP0607	Fast Forward Connection Pulley Assembly
M4	QMB1336	Supply Reel Table Hub	M30	QBS1128	Lock Pin	M55	QX10112	Rewind Idler Assembly	M83	QMK1838	Upper Base Plate
M5	QDR1139	Supply Reel Table	M31	QBC1372	Reel Table Spring	M56	QXL1383	Fast Forward Arm Assembly	M84	XSN3+5S	Screw ±3×5
M6	QMF2118	Fast Forward Arm Bracket	M32	QBW2008	Poly Washer 2φ	M57	QMK1840	Head Base Plate	M85	QDP1828	Fast Forward Pulley
M7	QML3581	Sub Control Lever	M33	XUB4FT	Stop Ring 4φ	M58	QMZ1241	Head Spacer	M86	QXH0357H	Chassis Cover Assembly
M8	QML3583	Main Control Lever	M34	XUB3FT	Stop Ring 3φ	M59	QBN1740	Head Pressure Spring	M87	QXC0079	Tape Counter
M9	QML3584	Record Reverse Lever	M35	QBW2012	Poly Washer	M60	QBC1278	Head Spring (for Record/Playback Head)	M88	QDB0207	Counter Belt
M10	QML3586	Head Base Plate Lift Lever	M36	QXL1354	Sub Lever Assembly	M61	QBCA0008	Head Spring (for Erase Head)	M89	QMAM0150	Counter Angle
M11	QML3594	Auto-Stop Release Arm	M37	QXL1355	Main Lever Assembly	M62	QML3591	Brake Arm	M90	XWC26B	Washer 2.6φ
M12	QML3603	Erase Safety Lever	M38	QML3582	Pause Lock Lever	M63	QML3591	Sub Head Base Plate	M91	XSN26+6	Screw ±2.6×6
M13	QML3604	Auto-Stop Driving Lever	M39	QBT1896	Lever Release Spring	M64	QMN2550	Roller	M92	XTN2+6B	Tapping Screw ±2×6
M14	QML3605	Auto-Stop Detection Lever	M40	QXL1381	Pressure Roller Assembly	M65	QDK1017	Steel Ball 2φ	M93	XTN26+6B	Tapping Screw ±2.6×6
M15	QML3592	Change Lever	M41	QBN1743	Pressure Roller Spring	M66	QBP1873	Head Base Plate Pressure Spring	M94	XTN26+10B	Tapping Screw ±2.6×10
M16	QMR1820	Record Rod	M42	QML3588	Fast Forward Lever	M67	QBT1597	Brake Arm Spring	M95	XTN26+12B	Tapping Screw ±2.6×12
M17	QMR1821	Auto-Stop Connection Rod	M43	QBN1748	Fast Forward Spring	M68	QBT1892	Head Release Spring	M96	XTN3+10B	Tapping Screw ±3×10
M18	QMR1822	Eject Rod	M44	QMA4063	Flywheel Retainer	M69	QMA3858	Head Adjustment Plate	M97	XTN3+24B	Tapping Screw ±3×24
M19	QMR1824	Control Rod	M45	QMA3920	Detection Lever Angle	M70	QZK0241	Takeup Gear Assembly	M98	XSN26+3	Screw ±2.6×3
M20	QMZ1239	Flywheel Thrust Retainer	M46	QMS2546	Detection Lever Shaft	M71	QXU0170	Motor Assembly	M99	XSN2+10	Screw ±2×10
M21	QBC1357	Lock Pin Pressure Spring	M47	QMF1682	Switch Retaining Plate	M72	QXK2286	Sub Chassis Assembly	M100	QBN1741	Change Lever Spring
M22	QBT1682	Auto-Stop Connection Rod Spring	M48	XSN2+6	Screw ±2×6	M73	QDG1199	Auto-Stop Gear	M101	XWG2	Washer 2φ
M23	QBT1894	Main Lever Spring	M49	QXF0164	Flywheel Assembly	M74	QDG1200	Cam Gear	M102	QML3644	Tape Detection Lever-A (for Metal Tape)
M24	QBN1739	Selection Lever Spring	M49-1	QBW2049	Poly Washer	M75	QDB0281	Capstan Belt	M103	QML3645	Tape Detection Lever-B (for CrO2 Tape)
M25	QBN1742	Pressure Roller Release Spring	M49-2	QBW2026	Washer	M76	QDB0274	Takeup Belt	M104	QBW2085	Poly Washer
M26	QBN1744	Sub Gear Spring	M50	QXD1143	Takeup Reel Table Assembly	M77	QDB0273	Fast Forward Belt	M105	XTN26+6BFZ	Tapping Screw ±2.6×6
			M51	QXL1382	Idler Lever Assembly	M78	QDB0274	Record/Playback Selection Arm Assembly			

## REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
<b>CABINET PARTS</b>								
G 1	[B] QKMM0044S	Main Case	G 9	QKJM0046	Obstruction Rod	G 28	QGBM0046	"Silver Type"
	[For United Kingdom.]		G 10	QMAM0123	Switch Angle (for S7)		QGBM0046	"Black Type"
	[B] QKMM0044K	Main Case	G 11	XSN3+6S	Screw ±3×6	G 29	QGRM0046	"Black Type"
	[For United Kingdom.]		G 12	XWA3B	Washer 3φ	G 30	QKJM0046	"Black Type"
	[DN] QKMM0043S	Main Case	G 13	XTN3+10B	Screw ±3×10			
	[For Australia.]			"Silver Type"				
	[A] QKMM0047S	Main Case		XTN3+10BFZ	Screw ±3×10	G 31	QGKM0046	"Silver Type"
	[For all European areas, Asia, Latin America, Middle East and Africa areas.]			"Black Type"			QGBM0046	"Black Type"
	[DN] QKMM0043S	Main Case	G 14	QMAM0129	Stopper	G 33	QGBM0046	"Black Type"
	[For all European areas, Asia, Latin America, Middle East and Africa areas.]		G 15	QKJM0085	Mechanism Chassis	G 34	QGBM0046	"Black Type"
	[For all European areas, Asia, Latin America, Middle East and Africa areas.]		G 16 [D]	QGSM0175	Main Name Plate	G 35	QMR1820	"Black Type"
	[For all European areas, Asia, Latin America, Middle East and Africa areas.]			[For all European areas except United Kingdom.]		G 36	QML3581	"Black Type"
	[For all European areas, Asia, Latin America, Middle East and Africa areas.]			[N] QGSM0182	Main Name Plate	G 37	QDG1101	"Black Type"
	[For all European areas, Asia, Latin America, Middle East and Africa areas.]			[For Asia, Latin America, Middle East and Africa areas.]		G 38	QMN2550	"Black Type"
	[For all European areas, Asia, Latin America, Middle East and Africa areas.]			[BA] QGSM0176	Main Name Plate			
	[For United Kingdom and Australia.]			[For United Kingdom and Australia.]				
G 2	QYBM0046	Bottom Cover Assembly	G 17	QMLM0041	Recording Lever	G 39	QXL149	"Silver Type"
	"Silver Type"		G 18	QBSM0007	Recording Wire		QXL158	"Silver Type"
	QYBM0046K	Bottom Cover Assembly	G 19	XTN3+10B	Tapping Screw ±3×10		QXL158	"Black Type"
	"Black Type"		G 20	QNQ1070	Nut 12φ	G 40	QXL149	"Silver Type"
G 2-1	QKA1083	Rubber Foot					QXL158	"Black Type"
G 2-2	QH01313	Step Screw	G 21	XTN3+12B	Tapping Screw ±3×12		QXL158	"Black Type"
G 3	QYFM0057	Cassette Lid Assembly	G 22	QMF00019	Volume Angle (for VR3, 4)		QXL158	"Black Type"
	"Silver Type"		G 23	XSN2+3	Screw ±2×3			
	QYFM0057K	Cassette Lid Assembly	G 24	SJS9607	Direct Connector			
	"Black Type"		G 25	QKJM0077	Direct Connector Holding Plate	G 41	QXL149	"Silver Type"
G 4	QYK0141	Input Level Control Knob					QXL158	"Black Type"
			G 26	QKJM0079	P.C.B. Holding Plate		QXL158	"Black Type"
G 5	QGG0201	Slide Guide	G 27	[DBA] QGKM0182	Switch Shelter	G 42	QXL149	"Silver Type"
G 6	QGBM0023	Indicate Plate		"Silver Type"			QXL158	"Black Type"
	QGBM0023K	Indicate Plate		[For all European areas and Australia.]			QXL158	"Black Type"
	"Black Type"			[DBA] QGKM0182K	Switch Shelter		QXL158	"Black Type"
G 7	QGOM0087	Switch Button		"Black Type"				
G 8	QGOM0086	Power Button		[For all European areas and Australia.]				





## SPECIFICATIONS

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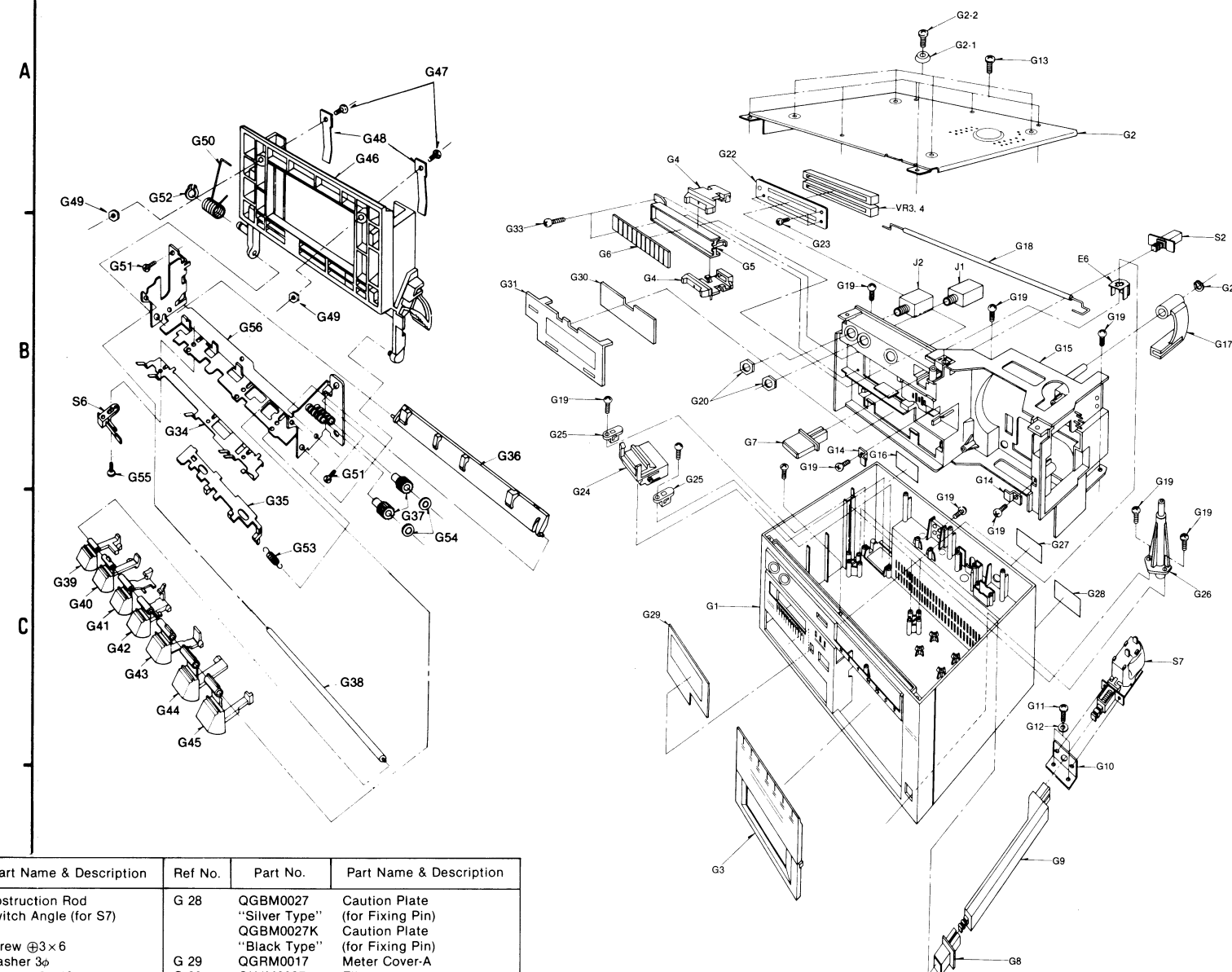
Assembly notes  
of RS-M51,  
(s).

Part Name & Description	Ref. No.	Part No.	Part Name & Description
Idle Assembly	M80	QML3580	Record/Playback Selection Lever
Idle Spring	M81	QBT1895	Record/Playback Selection Lever Spring
Forward Idle Assembly			
Idle Assembly	M82	QXP0607	Fast Forward Connection Pulley Assembly
Forward Arm Assembly			
Base Plate	M83	QMK1838	Upper Base Plate
Spacer	M84	XSN3+5S	Screw 3×5
Pressure Spring	M85	QDP1828	Fast Forward Pulley
Spring	M86	QXH0357H	Chassis Cover Assembly
Record/Playback Head	M87	QXC0079	Tape Counter
Spring (for Erase Head)	M88	QDB0207	Counter Belt
Arm			
Head Base Plate	M89	QAMM0150	Counter Angle
	M90	XWC26B	Washer 2.6φ
	M91	XSN26+6	Screw 2.6×6
	M92	XTN2+6B	Tapping Screw 2×6
Base Plate Pressure Spring	M93	XTN26+6B	Tapping Screw 2.6×6
Arm Spring	M94	XTN26+10B	Tapping Screw 2.6×10
Release Spring	M95	XTN26+12B	Tapping Screw 2.6×12
	M96	XTN3+10B	Tapping Screw 3×10
Adjustment Plate	M97	XTN3+24B	Tapping Screw 3×24
Gear Assembly	M98	XSN26+3	Screw 2.6×3
Assembly	M99	XSN2+10	Screw 2×10
Top Gear	M100	QBN1741	Change Lever Spring
Arm	M101	XWG2	Washer 2φ
Belt	M102	QML3644	Tape Detection Lever-A (for Metal Tape)
Forward Belt			
Playback Selection Arm	M103	QML3645	Tape Detection Lever-B (for CrO <sub>2</sub> Tape)
ly	M104	QBW2085	Poly Washer
	M105	XTN26+6BFZ	Tapping Screw 2.6×6

## REPLACEMENT PARTS LIST

Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
<b>CABINET PARTS</b>								
G 1 [B]	QKMM0044S	Main Case	G 9	QKJM0046	Obstruction Rod	G 28	QGBM0027	Caution Plate (for Fixing Pin)
	[For United Kingdom.]		G 10	QAMM0123	Switch Angle (for S7)		QGBM0027K	Caution Plate (for Fixing Pin)
	[B] QKMM0044K	Main Case	G 11	XSN3+6S	Screw 3×6	G 29	QGRM0017	Meter Cover-A
	[Black Type]		G 12	XWA3B	Washer 3φ	G 30	QKJM0087	Filter
	[For United Kingdom.]		G 13	XTN3+10B	Screw 3×10			
	[A] QKMM0047S	Main Case		XTN3+10BFZ	Screw 3×10	G 31	QKGM0180	Meter Cover-B
	[For Australia.]		G 14	QAMM0129	Stopper		QKGM0180K	Meter Cover-B
	[DN] QKMM0043S	Main Case	G 15	QKJM0085	Mechanism Chassis	G 33	XTN26+8B	Tapping Screw 2.6×8
	[Silver Type]		G 16 [D]	QGSMM0175	Main Name Plate	G 34	QBP1875	Obstruction Lever Spring
	[For all European areas, Asia, Latin America, Middle East and Africa areas.]			[For all European areas except United Kingdom.]		G 35	QMR1823	Obstruction Rod
	[DN] QKMM0043K	Main Case		[N] QGSMM0182	Main Name Plate	G 36	QML3593	Lock Arm
	[Black Type]			[For Asia, Latin America, Middle East and Africa areas.]		G 37	QDG1102	Holder Gear
	[For all European areas, Asia, Latin America, Middle East and Africa areas.]			[BA] QGSMM0176	Main Name Plate	G 38	QMN2554	Operation Lever Shaft
	[For United Kingdom and Australia.]			[For United Kingdom and Australia.]				
G 2	QYBM0046	Bottom Cover Assembly	G 17	QMLM0041	Recording Lever	G 39	QXL1493	Eject Button Assembly
	[Silver Type]		G 18	QBSM0007	Recording Wire		QXL1581	Eject Button Assembly
	[Black Type]		G 19	XTN3+10B	Tapping Screw 3×10	G 40	QXL1494	Record Button Assembly
G 2-1	QKA1083	Rubber Foot	G 20	QNNQ1070	Nut 12φ		QXL1582	Record Button Assembly
G 2-2	QHQ1313	Step Screw					QXL1495	Rewind/Review Button Assembly
G 3	QYFM0057	Cassette Lid Assembly	G 21	XTN3+12B	Tapping Screw 3×12		QXL1583	Rewind/Review Button Assembly
	[Silver Type]		G 22	QMFMM0019	Volume Angle (for VR3, 4)		QXL1584	Fast Forward/Cue Button Assembly
	[Black Type]		G 23	XSN2+3	Screw 2×3			
	QYFM0057K	Cassette Lid Assembly	G 24	SJS9607	Direct Connector	G 41	QXL1495	Rewind/Review Button Assembly
	[Black Type]		G 25	QKJM0077	Direct Connector Holding Plate		QXL1583	Rewind/Review Button Assembly
G 4	QYK0141	Input Level Control Knob Assembly	G 26	QKJM0079	P.C.B Holding Plate		QXL1496	Fast Forward/Cue Button Assembly
G 5	QGG0201	Slide Guide	G 27	[DBA] QGKM0182	Switch Shelter		QXL1584	Fast Forward/Cue Button Assembly
G 6	QGBM0023	Indicate Plate		[Silver Type]				
	[Silver Type]			[For all European areas and Australia.]				
	QGBM0023K	Indicate Plate		[DBA] QGKM0182K	Switch Shelter			
	[Black Type]			[Black Type]				
G 7	QGOM0087	Switch Button (for Dolby NR)		[For all European areas and Australia.]				
G 8	QGOM0086	Power Button						

## CABINET PARTS LOCATION



Ref. No.	Part No.	Part Name & Description	Ref. No.	Part No.	Part Name & Description
G 43	QXL1497	Playback Button Assembly	A 2	SHE135	Fixing Pin
	QXL1585	Playback Button Assembly		SHE135-1	Fixing Pin
G 44	QXL1498	Stop Button Assembly	A 3 [D]	QQT3307	Instruction Book
	QXL1586	Stop Button Assembly		[For all European areas except United Kingdom.]	
	QXL1499	Pause Button Assembly		[B] QQT3308	Instruction Book
G 45	QXL1587	Pause Button Assembly		[For United Kingdom.]	
	QKFM6007K	Cassette Holder		[N] QQT3309	Instruction Book
G 46	XSN2+5	Screw 2×5		[For Asia, Latin America, Middle East and Africa areas.]	
G 47	QBP1899	Holder Spring		[A] QQT3326	Instruction Book
G 48	XNG2E	Nut 2φ		[For Australia.]	
G 49	QBN7008	Cassette Holder Spring	<b>PACKINGS</b>		
G 50	XTN26+6B	Tapping Screw 2.6×6	P 1 [N]	QPNM0192	Inside Carton
G 51	XUB5FT	Stop Ring 5φ		[For Asia, Latin America, Middle East and Africa areas.]	
G 52	QBT1597	Obstruction Rod Spring		[DBA] QPNM0189	Inside Carton
G 53	QBW2082	Washer		[For all European areas and Australia.]	
G 54	XTN2+6B	Tapping Screw 2×6	P 2	QPAM0052	Cushion
G 55	QXA1044	Operation Button Angle Assembly	P 3	[DBA] QPSM0009	Pad
G 56				[For all European areas and Australia.]	
<b>ACCESSORIES</b>					
A 1	SJP2241-1	Connection Cord	P 4	XZB40X50A02	Poly Bag
			P 5	QPQ1052	Poly Sheet



# Parts Change Notice

(D)...For all European areas  
except United Kingdom.  
(B)...For United Kingdom.

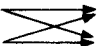
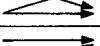
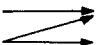
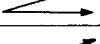
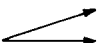
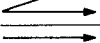




(N)...For Asia, Latin America,  
Middle East and Africa  
areas.

(A)...For Australia.


Model No.

RS-5

Please revise the original parts list in the Service Manual to conform to the change(s) shown herein. If new part numbers are shown, be sure to use them when ordering parts.

Reason for Change		*The circled item indicates the reason. If no marking, see the Notes in the bottom column.			
1. Improve performance					
2. Change of material or dimension					
3. To meet approved specification					
4. Standardization					
5. Addition					
6. Deletion					
7. Correction					
8. Other					
Interchangeability Code		**The circled item indicates the interchangeability. If no marking, see the Notes in the bottom column.			
Parts		Set Production			
A	Original		Early	Original or new parts may be used in early or late production set.	
	New		Late	Use original parts until exhausted, then stock new parts.	
B	Original		Early	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts where possible, then stock new parts.	
	New		Late		
C	Original		Early	New parts only may be used in early or late production sets.	
	New		Late	Stock new parts.	
D	Original		Early	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.	
	New		Late		
E Other					
Part Number					
Model No.	Ref. No.	Original Part No.	New Part No.	Notes (* - **)	Part Name & Descriptions
RS-5	R49, 50	ERO25CKG2003	ERD25TJ184	1-C	Resistors
"	R65, 66	ERD25FJ562	ERD25FJ332	"	"
"	R210	ERD25FJ471	ERD25FJ391	"	"
"	C3, 4	ECKD1H271KB	_____	"	Capacitors
"	C67, 68	ECQM1H223JZ	_____	1-A	"
"	C79, 80	ECQM1H183JZ	_____	"	"
"	C210	ECEA1VS331	ECEA1VS221	8-A	Capacitor
"	C211	ECEA1CS331	ECEA1CS221	"	"
"	C213 	ECEA1VS102	ECEA1VSS471	"	"
"	C214	ECEA1CS102	ECEA1CS471	"	"
<b>NOTE:</b> • Important safety notice Components identified by  mark have special characteristics important for safety When replacing any of these components, use only manufacturer's specified parts					

**NOTE:**

- Important safety notice  
Components identified by  mark have special characteristics important for safety  
When replacing any of these components, use only manufacturer's specified parts

File this Parts Change Notice with your copy of the Service Manual.

Original Service Manual is Model No. RS-5 Order No. ARD82050140C8-10.

**Technics**

**National / Panasonic**

**Matsushita Electric Trading Co., Ltd.**

P.O. Box 288, Central Osaka Japan  
Printed in Japan.

# Parts Change Notice

(D)...For all European areas except United Kingdom. (N)...For Asia, Latin America, Middle East and Africa areas. (A)...For Australia.

Model No.

RS-5

Please revise the original parts list in the Service Manual to conform to the change(s) shown herein. If new part numbers are shown, be sure to use them when ordering parts.

Reason for Change		*The circled item indicates the reason. If no marking, see the Notes in the bottom column.			
1. Improve performance					
2. Change of material or dimension					
3. To meet approved specification					
4. Standardization					
5. Addition					
6. Deletion					
7. Correction					
8. Other					
Interchangeability Code		**The circled item indicates the interchangeability. If no marking, see the Notes in the bottom column.			
Parts	Set Production				
A	Original → Early New → Late	Original or new parts may be used in early or late production set. Use original parts until exhausted, then stock new parts.			
B	Original → Early New → Late	Original parts may be used in early production sets only. New parts may be used in early or late production sets. Use original parts where possible, then stock new parts.			
C	Original → Early New → Late	New parts only may be used in early or late production sets. Stock new parts.			
D	Original → Early New → Late	Original parts may be used in early production sets only. New parts may be used in late production sets only. Stock both original and new parts.			
E	Other				
Part Number					
Model No.	Ref. No.	Original Part No.	New Part No.	Notes (* - **)	Part Name & Descriptions
RS-5	Q1, 2	2SC1328-S	2SC1844F	8-A	Transistors
"	Q3, 4	2SC1328-S	2SC945P	"	"
"	Q19, 30	2SA999	2SA1115E	"	"
"	Q21, 22	2SD965	2SD471	"	"
"	Q25	2SD592	2SD471	"	Transistor

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